



**Delta Agricultural Plan
Phase 1: Delta Agriculture Profile**

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Executive Summary

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The Delta Agricultural Profile is Phase 1 of a 3-stage process to develop an Agricultural Plan for the Corporation of Delta. This Profile is intended to provide the background and context necessary for the development of policy that supports the long-term sustainability of agricultural economy and integrates agriculture into the economic growth and development of Delta.

Delta's agricultural sector is unique in regard to the size of its farming. Its commercial farms are among the largest in size in the Lower Mainland and make use of high level of land leasing in their operations. Historically, Delta has been an efficient supplier of vegetables, dairy products and forages. In the last 20 years, agriculture expanded significantly in Delta with the introduction of greenhouse crops. While the sector retains significant domestically-oriented dairy and poultry operations, the bulk of agricultural production is either exported (e.g., greenhouse vegetables, berries) or competes head on with imports in local markets (e.g., field vegetables).

In terms of land use, vegetable farms occupied 28% of the total farm area, followed by potatoes (26%) and forage crops (24%). Greenhouse growing area comprises only 1.7% of total farm area.

In 2005, the sector generated gross farm receipts of about \$190 million. Greenhouse vegetable production accounted for 73% of total Gross Farm Receipts (GFR), followed by potatoes (8.3%) and berries (6.7%). The sector spends over \$166 million annually in operating expenses. Agriculture employs the equivalent of 1,500 person years on farms in Delta, not counting the 265 farm operators on 180 farms. Wages paid in 2005 totalled \$34.3 million.

Notwithstanding the local significance of agriculture in Delta, several factors are conspiring to challenge the sector:

- Loss of local horticultural processing options to support the primary production
- Delta farmers are facing increases in the costs of doing business that their competitors do not face, particularly with respect to regulatory compliances, higher input costs (e.g., water, energy), and taxes (carbon, property and improvements).
- Transportation projects are taking farmland, disrupting agricultural operations, and exacerbating other issues in the area
- Waterfowl depredation is causing substantial field crop losses and jeopardizing the economic viability of established farms
- A growing population is competing with farmers for farmland for rural-residential purposes, creating non-agricultural competition for farmland in its wake
- Government decision-makers and the general public have limited appreciation of the challenges facing agriculture or the conditions required to support farming.

Being in close proximity to a large Lower Mainland urban population, Delta has opportunities to supply local markets for agricultural production. In order to accomplish this, conditions need to be enhanced and/or created that improve opportunities for farmers to function in an economically viable manner.

This report was first prepared in the fall of 2010. Some of the references within the report may reflect information that was accurate at that time, and may have been updated since.

Agriculture and Agri-Food Canada, the B.C. Ministry of Agriculture and the Investment Agriculture Foundation of BC, are pleased to participate in the production of this report. They are committed to working with their industry partners to address issues of importance to the agriculture and agri-food industry in British Columbia. Opinions expressed in this report are those of the authors and not necessarily those of the Investment Agriculture Foundation, the B.C. Ministry of Agriculture or Agriculture and Agri-Food Canada

Acronyms Used in this Report

- AAFC – Agriculture and Agri-Food Canada
- ALC – Agricultural Land Commission
- ALR – Agricultural Land Reserve
- BCAA – BC Assessment Authority
- BCAC – BC Agriculture Council
- BCARA – BC Association for Regenerative Agriculture
- BCFPA – BC Food Processors Association
- BCMAL – BC Ministry of Agriculture and Lands
- BMP – Beneficial Management Practice
- CFIA – Canadian Food Inspection Agency
- COABC – Certified Organic Associations of BC
- DFO – Department of Fisheries and Oceans
- EFP – Environmental Farm Plan
- ESA – Environmentally Sensitive Area
- FCC – Farm Credit Canada
- FREMP – Fraser River Estuary Management Program
- FVOPA – Fraser Valley Organic Producers Association
- FVRD – Fraser Valley Regional District
- GHGs – Greenhouse gases
- GVWD – Greater Vancouver Water District
- IAFBC – Investment Agriculture Foundation, BC
- LUI – Land Use Inventory
- MOE – Ministry of Environment
- Metro Vancouver (MV) – Greater Vancouver Regional District
- OCP – Official Community Plan
- OTCO – Oregon Tilth Certified Organic Society
- PACS – Pacific Agricultural Certification Society
- QAI – Quality Assurance International
- SD – School District
- SFPR – South Fraser Perimeter Road
- SSFPA – Small Scale Food Processors Association
- TFN – Tsawwassen First Nation
- TLC – The Land Conservancy of BC
- USDA – US Department of Agriculture
- WMA – Wildlife Management Area

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1.0 Introduction

Delta, located in the Metro Vancouver Regional District of BC, is one of the most productive agricultural regions of the Province. However, agriculture is facing many challenges and local governments throughout the country are grappling with how best to maintain and enhance the economic viability of agriculture. While it is true that agriculture is now a global industry, local governments have an important role to play in supporting agriculture. These can range from a positive regulatory and policy environment to provision of basic services such as water and drainage that benefit agriculture.

A first step in promoting and enhancing agriculture is to develop a direction - a plan of action. The Corporation of Delta with support from the Investment Agriculture Foundation (IAF) of British Columbia, Agriculture and Agri-Food Canada (AAFC), and the BC Ministry of Agriculture (MA)¹ has embarked on the preparation of an agricultural plan. A first phase of developing a plan is the compilation of background information on agriculture within Delta. This report provides a comprehensive situational analysis of agriculture in Delta.

The information presented is intended to provide a context for addressing agricultural policy needs in the second phase of the work. It includes:

- An update of the provincial, regional and local context for agricultural planning
- An updated comprehensive analysis of agricultural resources, farm characteristics and the contribution of agriculture to the local economy
- Further discussion of issues facing agriculture in Delta.

The findings presented are based upon an analysis of existing literature, Internet search, research and investigation, and contact with knowledgeable persons and relevant agricultural agencies. This report is intended to establish issues and conditions facing the agricultural sector in Delta, and form the basis of a plan to provide direction and guidance to the Corporation and the farming community.

¹ Formerly the BC Ministry of Agriculture and Lands.

2.0 Agricultural Issues and Challenges

On one hand, there are distinct trends that suggest there is increasing demand for local food products and significant local economic development opportunity lies in pursuing these trends. On the other hand, the systems created to promote rural development and that have generated agricultural productivity are now weakened and degraded to a point that the capacity to meet the opportunity is a challenge.

2.1 Broader Trends and Issues

In planning for Delta agriculture, it is useful to keep in mind that its largest sectors (e.g., greenhouse vegetables, potatoes, vegetables, berries) are influenced by global competition and global market trends. The greenhouse and berry sectors are export oriented. Much of local fresh food consumption is supplied from beyond the borders of BC and Canada, in competition with local produce. The consumer public makes agricultural product choices from a selection of goods sourced globally, usually based on lowest price. Since it is unlikely that shakeups in local production patterns can occur overnight, local agriculture need assistance in buying the time and making the adjustments required to adapt to changing market realities.

2.1.1 Sociological Trends and Issues

Possibly the strongest trend/issue that is sweeping the industry is the push toward locally based food production. There is growing uneasiness about long term food security and concern about the global environmental impacts of our food production, processing, and distribution system. Consumer advocacy groups, as well as the ordinary consumer are increasingly raising these issues and concerns. Deterioration in food safety, in light of recent food recalls, is being correlated with long supply chains the international food system has created.

The other important social trends are with respect to the continued focus on the health and nutrition benefits of the different food types, changing consumer preferences, and demographic changes. The declining political influence of the agricultural community, and the need to enter new partnerships, are critical issues for agriculture planning capacity.

Nevertheless, the public consciousness is slowly connecting local food availability to the need for local farmers to be viable. The time is ripe to redevelop relationships that may re-establish the economic connection between the local community and surrounding farmlands.

2.1.2 Technology Trends and Issues

A major trend is with respect to the growing need for the agriculture industry to introduce more advanced technologies for product identification, traceability and verification. This trend is driven by the major retailers, consumers and Canadian Food Inspection Agency (CFIA) for disease control management. This requirement will continue to change the cost structure of the production industry, and the overall need will be for solutions suitable for small scale farms that may have less capacity to introduce and afford these systems.

Technology will also assist in developing more efficient and sustainable systems for water, nutrients, pest control and energy.

2.1.3 Economic Trends and Issues

While food industry globalization continues, concerns with respect to the carbon impact of food production, and with the recession of 2009, has resulted in some retraction of the direction of globalization. There are a number of advocates that suggest the globalization in agriculture production and transportation creates high environmental and economic costs for food, but others would suggest these arguments are flawed. The cost and availability of inputs and raw resources is driving the location of food production at the same time that the “resource crunch” is becoming the single biggest challenge to continued economic prosperity.²

Global conglomeration has created a food system that is increasing the retail/farm price ratio by increasing the market for manufactured foods while sourcing raw materials from the lowest cost global suppliers. There will be continued consolidation at all levels in the food chain, which will reduce the number of commercial agricultural producers, processors and retailers.

There will likely be continued growth in the number of “alternative” food supply-distribution-retailing systems as producers strive to recapture some of the margin currently being appropriated by post-farm gate players in the food system. These developments will favour smaller scale local, organic, and direct-marketed food production, particularly in regions with populations having the income capacity to pay for higher quality, healthier, products and support social objectives.

2.1.4 Environmental Trends and Issues

An agricultural plan must have provision for the more efficient use of agricultural resources in an environmentally sustainable fashion. Competing demands for water for fish, wildlife and riparian habitat are expected to intensify particularly since climate change is expected to create drier conditions in the future. There is a strong impetus for more efficient use of energy resources coming from farmers and society in general, because of concerns over increased cost and climate change. Agriculture needs to make a strong case for adaptation to lower fossil fuel consumption and on-farm options that will accomplish that.

2.1.5 Governance Trends and Issues

The lines of responsibility and influence among the various stakeholders/interest groups in the economy, in particular agriculture, industry, urban planning, environmental groups, and the general public, are increasingly blurring. The general public can provide major pressure on government (areas of food safety and environment in particular) to change how agriculture practices are shaped, and what additional regulation is needed. In return, there is a need for society to take responsibility for ensuring that agriculture is treated more equitably as it often provides a large share of non-market goods (such as wildlife habitat) for public benefit.

There is also likely to be increasingly greater accountability demanded of agriculture. The farm sector is challenged to “show” rather than “tell” about compliances that society demands, causing increased costs to agriculture when overlapping regulatory regimes by various levels of government are not streamlined or coordinated to facilitate desired outcomes.

² See discussion in Nijam, A. D. Runnalls, and M.Nalle. 2007. Environment and Globalization: Five Propositions. http://www.iisd.org/pdf/2007/trade_environment_globalization.pdf

2.2 Local Agricultural Issues and Challenges

Effective response to local issues and challenges is required to ensure that Delta agriculture maintains the capacity to respond to agricultural trends and issues. The local agricultural sector competes for resources and space, with other demands in a community that has highly regarded environmental and social attributes. As such, there is the continual need for re-configuring agriculture in the face of these pressures without jeopardizing the current contribution that it makes to the economy or its potential for growth in the future. In particular, while new opportunities and agricultural specialty products get much of the press because they are novel and interesting, it is the bulk of the agricultural sector that needs to be assisted to adapt to change so that it may re-invigorate itself. The Delta agriculture sector is highly challenged by factors that create a higher cost of production environment that weakens farming viability.

2.2.1 Economic Sustainability of Farming in Delta

Most subsectors have been in an increasing cost-price squeeze over the last 20 years. The last major cropping innovation was the development of the greenhouse sector exporting produce to the US, which is now in stiff competition with suppliers from Mexico and the southern US. Vegetable crops for export must compete with global suppliers, while the domestic use faces competition from global imports. For the field crop producers, options have been slowly disappearing as the physical, manufacturing and marketing support infrastructure for farming has declined.

One key factor threatening the ability of farmers to compete with imports is the uneven “playing field” on which producers must compete. Delta farmers are concerned that the standards that their products must meet are not required of imports, for example, in regard to audits, food safety, traceability, and permitted pest controls. In addition, there is no assurance that imports are meeting regulatory standards respecting fisheries, wildlife and environment conservation. These are issues under federal jurisdiction and their resolution would require competing imports to demonstrate compliance with the same standards that Canadian farmers have to meet.

2.2.2 Availability, Quality and Cost of Water

There are concerns from farmers about supply of irrigation water to undersupplied areas, surface water quality and the high costs of municipal water. Irrigation water quality standards will need to be met to fulfill requirements of food safety audits. While irrigation supply system will be improved in conjunction with the South Fraser Perimeter Road development, Westham Island will continue to face salinity and water supply issues.

Municipal water is used in greenhouse operations and for horticultural processing. Costs are composed of a regional bulk rate and a municipal delivery rate. To date, Metro Vancouver has been unwilling to consider a lower bulk agricultural water rate³ in support of agriculture. The municipal delivery rate to agriculture in Delta could be lowered to agriculture by shifting the load onto other users.

2.2.3 Regulatory Compliances

Regulations that create extra costs and “red tape” for farming activities are perceived to be based on a rigid idea that farming should be restricted to production of fresh produce for farmers markets and that farmers and farmland should be obligated to donate social and environmental values as part of the business of farming. In particular, regulatory issues include increasing the flexibility on how farmers can use farmland for on-farm value-adding, cogeneration, housing, and family succession.

³ There is a bulk agricultural water rate in the Capital Regional District.

In attempts to develop on-farm agro-tourism and value added, provincial and municipal regulation is perceived by many farmers as too restrictive. There is interest that thresholds of minor commercial development should be raised to allow small scale developments with minimum external impact to proceed outside the planning system.

2.2.4 Rural Roads Congestion and Capacity

Rural roads in Delta are used extensively by commuters to get around traffic, creating safety and time delay issues for farmers. The Westham Island bridge is too small for current agricultural requirements. Farm access to the South Fraser Perimeter Road has not been adequately addressed. Increased use of rural roads for recreation is adding to difficulties for movement of agricultural equipment.

2.2.5 Agricultural Land Protection

Incremental conversions of farmland to non-farm uses continue to this day despite the fact that the ALR was instituted in 1973. There is a perceived need by farmers for the municipality and the Agricultural Land Commission (ALC) to work harder to ensure that deterrents to development are effective and that inescapable development of farmland results in tangible and meaningful benefits to agriculture that more than compensate for the impacts created. As well, unauthorized use needs to be better controlled to ensure that farmland is used for its designated purpose.

Incremental losses of land to transportation projects, port expansion, and treaty settlement are reducing the land base for farming and jeopardizing the ability to continue existing crop rotations. These impacts need to be identified when projects are proposed, effectively and efficiently mitigated to protect agriculture, and compensated for when losses to the agricultural sector cannot be avoided.⁴

2.2.6 Availability of Labour

In the mid-2000's, growers were faced with an absolute shortage in farm labour as the robust BC construction economy siphoned unskilled and low-skilled workers away from the agricultural industry. With the creation of the Seasonal Agricultural Workers Program (SAWP) in 2004, the availability situation has been alleviated as BC employers can access workers from Mexico, Guatemala, and the Caribbean. Philippine agricultural workers have also been brought in independently by other farm operators. In 2009, approximately 3,000 foreign seasonal agricultural workers were brought into BC, of which about 24% worked in Delta, and the majority in the greenhouse sector.

The importance of continued access to foreign migrant farm workers through the Seasonal Agricultural Worker Program (SAWP) cannot be overemphasized. The cost of the labour, which includes the wage cost of that labour indexed to rates paid in the domestic industry and various other services, is not at issue but its accessibility often is. Agencies that deal with farmers, such as Service Canada, to provide this service can improve the rules, processes, and ease with which farmers can access this vital program.

2.2.7 Waterfowl Depredation of Agricultural Crops

Farmers are challenged to control or mitigate damages to agricultural crops caused by waterfowl, which are reaching unsustainable levels. Agriculture is simply less economically sustainable when wildlife populations consume the fruits of production and environmental precautions compromise farming

⁴ Creating an agricultural compensation fund paid into by projects affecting Delta agriculture and used to offset agricultural impacts is an example of a strategy with potential benefits. An approach being developed by BC MOEN to develop policies to safeguard environmental resources could be applied to agricultural resources. See BC Ministry of Environment. 2010. Towards an Environmental Mitigation and Offsetting Policy for British Columbia: A Discussion Paper. http://www.env.gov.bc.ca/emop/docs/EMOP_DiscussionPaper.pdf

activities. The challenge is to seek the balance wherein agriculture can continue to provide habitat for fish and wildlife through adoption of mitigation measures and wildlife managers can take responsibility for the externalities that their management policies create by working with the agricultural sector to find practical solutions. While the Delta Farm and Wildlife Trust is a significant contributor to mitigating agriculture-wildlife conflicts, its programs do not resolve the economic challenges created on farming operations by wildlife depredation.

More specifically, a question needs to be answered: “What would it cost society to look after wildlife habitat if farming were to disappear?” This issue needs to be clearly articulated and the situation addressed if the agricultural sector is to have a long term future in Delta.

2.2.8 Restricted Access to Farmland

Some agricultural parcels are almost inaccessible to farm equipment and machinery, due incremental and cumulative changes to traffic patterns. These lands need to be identified and modifications made to facilitate agricultural access if farming is to continue.

2.2.9 Loss of Regional Processing Capacity

Closure of one of the last 3 vegetable processing plants in the Lower Mainland has drastically reduced markets for processing field vegetables and forced changes in crops and rotations. In addition to the immediate impact on level production, this situation has highlighted the precarious position of primary production in relation to decisions by the food industry beyond the farm gate. Farmers are concerned about their ability to access markets in an industry that continues to consolidate, concentrate and increase in size at the processing, wholesaling and retail levels.

2.2.10 Ability to Add Value on Farms

Farmers are looking for ways to maintain viability by increasing the value of products marketed at the farm gate. Development of this potential has implications for on-farm agri-industrial expansion, regulatory processes, and permitted uses of farmland. For example, farmers are interested in developing digesters, and solar and wind energy projects to generate other farm-based revenue and to reduce on-farm operating costs but need access to the power grid in order to sell the energy created and the permitting to allow such uses to occur on farmland.

Similarly, smaller scale on-farm food processing solutions may be more feasible than the larger scale processing that has left, because it may be able to focus more on local markets and niche opportunities. In any case, processing is vital to increasing the value of products before the farm gate and in extracting value from off-grades of farm production that might otherwise be channeled into non-revenue producing uses.

2.2.11 High Property and Inputs Taxes

Farmers in Delta are concerned that farm taxes in Delta are higher than some municipalities in the lower mainland.⁵ It is recognized that different municipalities have different ways of distributing their tax loads on residents. The impacts of taxation are heightened by the increasing scale and value of improvements and by the raising value of farmland.

Into the future, as farmers consider renewable energy options, property tax treatment of renewable energy projects (e.g., production facilities and farmland) is likely to influence feasibility and the benefit obtainable. Policy is also needed regarding the assessment valuation of farm based energy options,

⁵ See BC Ministry of Community, Sport & Cultural Development. Local Government Tax Rates and Assessments. http://www.cscd.gov.bc.ca/lgd/infra/tax_rates/tax_rates2010.htm

particularly those in which more than 50% of the output produced (e.g., energy, heat, fertilizer, carbon dioxide) is used on the farm.

Farmers are continually looking for ways to reduce the cost of inputs. Delta farmers, heavily reliant as they are on fossil fuels for energy, are significantly affected by taxes on energy. While farmers have access to farm tax rates for coloured motor fuels, the carbon tax introduced provincially in Jan, 2010 increases the cost of fossil fuels⁶ in BC by \$0.0445 per litre (rising to \$0.0667 by July, 2012), relative to all other jurisdictions in North America.

2.2.12 Farm Succession

There is a tradition among farmers of transferring the farm from one generation to the next. Farm assets are now so valuable that passing the farm onto the next generation is financially daunting. Current tax laws and private and public succession schemes need to be re-invigorated with new ideas that reflect current transfer challenges. With the farm values involved, having to pay capital gains when farm ownership changes effectively forces liquidation of the operation.

First, intergenerational succession and assets rollover with deferred capital gains is not available to extended family under current federal tax laws. Yet, the value of many family farm operations today has involved investment by extended families to whom full capital gains comes due with the expiration of the operating entity. At the least, farm families need to be fully informed of business models that would facilitate the survival of the extended farming operation through succession.

Second, the process to move farm assets specifically between farming siblings within a generation without incurring capital gains requires legal foresight as transfers between siblings trigger capital gains. With the aging farm population and for enterprises with highly valued land in large parcels (such as in close proximity to urban centres), this could mean the breakup of the family farm and the dissolving of established farming operations. Broader rollover provisions, focusing on keeping farm assets together in farming, would assist in providing stability in the Delta agricultural sector.

2.2.13 Public Support for Agriculture

Farmers perceive that the public really does not appreciate the financial stress that the agricultural sector is under. Agriculture is also losing out to other interests in the community, with outcomes that further jeopardize farming. There is a critical need for public education and linkages between community and agriculture.

2.2.14 Food Security and Climate Change

Societal concern about the ability to produce food in an uncertain climate regime is placing a well-placed focus on local agriculture. This focus needs to be translated into key initiatives that will maximize the opportunity for successful adaptation by local farmers.

Delta agriculture has a strong food focus, with the vast majority of production providing foodstuffs either directly or indirectly for human consumption. In a local jurisdiction where production is seasonal and trade is so vitally important, attaining increased food security needs to focus on both more

⁶ Fossil fuels represents all non-renewable fuels, and includes gasoline, light fuel oil (diesel), natural gas, and coal. See BC Ministry of Finance, 2010. Tax Schedule.
http://www.sbr.gov.bc.ca/documents_library/shared_documents/Carbon_Tax_Rates_by_Fuel_Type_from_Jan_2010.pdf

emphasis on domestic markets and on enhancing Delta agriculture's ability to compete in global markets.

Farmers are concerned that an effective response to climate change requires maintaining the flexibility for farmers to respond to new circumstances. This includes providing the environment for working agriculture so that farmers can adapt and maintaining the health of the agricultural sector so that it can afford to respond to new challenges.

2.2.15 Rural/Urban Interface

Planning along the rural/urban edge needs to ensure that urban activities do not encroach on the ability of farmers to utilize farmland for legitimate farming purposes.

3.0 Context for an Agricultural Plan in Delta

There are significant and ongoing initiatives at the national, provincial and regional levels that are affecting and promoting BC and local agriculture. The following sections summarize national and provincial initiatives that are having an ongoing impact on agriculture.

3.1 National Context for an Agricultural Plan

Most federal financial incentives directed toward agriculture are delivered through agreements with provinces that require provincial contributions to lever federal funding. Canadian agriculture has been going through a continuum of paradigm-shifting changes in response to World Trade Organization (WTO) free trade negotiations, impacts of globalization forces in the food system, increased foreign access to domestic food markets, animal disease outbreaks (e.g., BSE and avian influenza), and health and food safety concerns (e.g. specified risk materials and tainted meat).

Most recently, additional concerns have emerged about food security, global warming, and food self-sufficiency. Consumers in the wealthier countries and regions of the world have created demand for products that are natural/organic, locally produced, and exhibit economic, environmental and social sustainability in their production. However, local solutions that are somewhat in contra-positioned to food system globalization are emerging, even though large multi-national food companies continue to merge and the food distribution system becomes ever more concentrated. In 2009, a “Buy USA” movement, which has started to exert protectionist effects on Canada-US trade, has attracted the attention of the Prime Minister’s office.⁷

Canada has been pursuing an agricultural strategy based on the principle of sustainable development, i.e., development that meets the needs of the present without compromising the ability of future generations to meet their own needs.⁸ In June 2008, the Federal Sustainable Development (SD) Act was passed, requiring the development of a SD strategy in 2010.

The current sustainable agricultural strategy has evolved out of the Agricultural Policy Framework and focuses on five priority areas: food safety and quality, business risk management, environment, science and innovation and renewal.

3.1.1 Canada-BC Growing Forward Agreement

The current national focus on agriculture is encompassed in the Growing Forward Initiative and Growing Forward Framework Agreement negotiated with all provinces and territories. The Agreement has several broad categories of focus:

- Provide innovation workshops leading to the adoption of new technologies
- Enable better access to programs by producers
- Strengthen the Canada Brand domestically and globally
- Enhance the safety and security of the food system
- Promote environmentally responsible agriculture
- Develop national biosecurity and risk management systems.

⁷ Woods, A. 2009, Obama to review “buy USA” policy. The Star. Jan 31. <http://www.thestar.com/article/580216>

⁸ Government of Canada. What is Sustainable Development? http://www.sdinfo.gc.ca/s1_e.cfm

A bilateral agreement was signed with BC in April, 2009, making available \$553 million over the next 5 years.⁹ The initiatives are being delivered through various BC agencies including the BC Agriculture Council (BCAC) and the BC Investment Agriculture Foundation (IAF). More detail is presented in Section 3.2.12, below.

3.1.2 Federal Programs

There are currently about 40 federal programs that are part of the federal Growing Forward Initiative, including some programs that are carried forward from previous federal-provincial agreements. Each program has a specific focus that has been tailored in delivery by IAF to better reflect BC needs and conditions. Programs most relevant to Delta farmers at the local level include:

- Advance Payments Program (APP) – provides advance loans based on expected production of field crops, livestock and greenhouse and nursery operations. The program is accessible through ACC Farmers Financial to individual farmers if they are not part of a participating producer organization.
- Agricultural Flexibility Fund (AFF) – funds projects that:
 - Help reduce the cost of production or improve environmental sustainability for the sector
 - Support value-chain innovation and sectoral adaptation
 - Address emerging market opportunities and challenges for the sector.
- Agri-Food Trade Service – assists exporters and potential exporters with market information, trade counseling and export support activities, which will take the exporter from initial enquiry to foreign market
- AgriInvest – is a savings program with farmer deposits matched by government
- Agri-Opportunities – funding is intended to accelerate the commercialization of new agricultural products, processes, or services
- AgriProcessing Initiative – repayable contributions are provided towards the cost of purchasing and installing new-to-company machinery and equipment in Canadian facilities in order to enable the adoption of innovative and new-to-company manufacturing technologies and processes
- AgriStability (delivery transferred to BCMAL in 2010)– payments made to participants when margins fall below a reference margin
- Benchmarking for Success - compares your farm's performance with industry benchmarks
- Canada Brand Program – intended to increase awareness and recognition of the quality of Canadian food and agricultural products to buyers and consumers in international markets
- Canadian Agricultural Adaptation Program (CAAP) - funds priority projects focusing on:
 - Seizing opportunities
 - Responding to new and emerging issues
 - Pathfinding and piloting solutions to new and ongoing issues
- Canadian Agricultural Loans Act – a financial loan guarantee program that gives farmers easier access to credit
- Co-operative Development Initiative – providing advisory services, research and knowledge development, and funding innovative co-operative projects

⁹ See Canada and BC Sign Growing Forward Agreements. http://www2.news.gov.bc.ca/news_releases_2005-2009/2009AL0008-000604.htm

- ecoAgriculture Biofuels Capital Initiative - repayable contributions for the construction or expansion of transportation biofuels production facilities
- Environmental Farm Planning/Group Planning and Beneficial Management Practices – ongoing
- Production Insurance – AgriInsurance Program with premiums cost shared between producer, provincial and federal governments.

3.2 Provincial Context for the Agricultural Plan

Several agencies, with legislation, regulations and policies, affect how agriculture interacts within communities and with other stakeholders in BC. In addition, recent initiatives are currently being implemented.

3.2.1 Environmental Management Act

Under the Environmental Management Act¹⁰, provisions are included to exempt the producer from obtaining permits if defined conditions are met. Nonetheless, two regulations are important for local farmers: Agricultural Waste Control Regulation /Code of Practice (AWCR)¹¹ and the Organic Matter Recycling Regulation (OMRR)¹².

The AWCR prescribes how agricultural waste must be handled in order to prevent pollution. The Regulation and the code of practice deal with waste storage and also with on-farm composting. Producers that compost can:

- 1) Compost the agricultural waste produced on the farm, use it or sell the product off-farm, or
- 2) Bring in materials for composting, with the requirement that the compost be used on the farmer's own fields.

The Regulation has been applied with some flexibility as some municipalities in their farm bylaws require that more than 50% of the compost must be used on the own fields to allow selling the remainder. On-farm composting has been an issue in Delta in the past leading to a Right to Farm case (see below). Delta's zoning bylaw includes references to AWCR in their A1 zoning. Delta allows the selling of compost from farms if more than 50% of the raw material originates from on-farm sources. If between 1 and 49% of the waste originates from on-farm sources, only 50% can be sold.

The OMRR prescribes how composting is conducted in commercial facilities, including feedstock allowed, size and technology, siting and procedures, and compost quality. While in most areas OMRR is within provincial jurisdiction, some municipalities and regional districts have taken over the administering of OMRR requirements.

3.2.2 Agricultural Land Commission Act

The Agricultural Land Commission (ALC) is an independent provincial agency responsible for preserving agricultural and, encouraging farming in collaboration with communities, and encouraging local governments, First Nations, the province and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, bylaws and policies.¹³

¹⁰ http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_04

¹¹ http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_131_92

¹² http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/18_2002

¹³ The Agricultural Land Commission. http://www.alc.gov.bc.ca/commission/alc_main.htm

The Agricultural Land Reserve (ALR) is a provincial zone in which agriculture is recognized as the priority use where farming is encouraged and non-agricultural uses are controlled. Amendments have been made from time to time to the types of activities allowed on farm lands. The Agricultural Land Reserve Use, Subdivision and Procedure Regulation¹⁴ identifies the permitted uses, soil removal and placement of fill compliances, permitted subdivisions and non-farm uses of agricultural land, and application procedures and processes for considering inclusions and exclusions from the Agricultural Land Reserve (ALR). The Regulations are further supported by a number of policies related to activities designated as farm use. The commission also makes provisions under issued Orders to identify certain uses or subdivisions that may be allowed without the need for an application.

While the Act supersedes the zoning powers of the *Local Government Act*, the municipality is required to act as the agent for the Agricultural Land Commission (ALC) in land use matters related to the ALR. Nonetheless, the ALC makes the final decision related to land uses not in accordance with the provisions of the Act.

In 2002, the *Agricultural Land Commission Act (2002)* was brought into force, repealing the *Agricultural Land Reserve Act* and the *Soil Conservation Act* and resulting in appropriate amendments to the *Local Government Act*. The new Act incorporates some of the provisions of the repealed Acts and establishes the Provincial Agricultural Land Commission (ALC).

The new Act is intended to make the Commission more regionally responsive. Local governments are given the opportunity to become more involved in some aspects of ALR management through new regional panels consisting of commissioners with local knowledge, experience and interests.

ALC Service Plan

In 2002, changes were made to the ALC's Service Plan to allow for the consideration of community need as a criterion for the removal of land from the Agricultural Land Reserve. Several Commission decisions resulting in farmland removal have been made since 2002. The provision has been highly contentious in that it has been perceived as being used by municipalities to thwart the mandate of the ALC Act to preserve agricultural land. At the farmer level, uncertainty in the future status of land under development pressure inevitably leads to an unwillingness to invest in improvements to facilitate agricultural use since the improvements would be lost if the land were to be converted into non-agricultural use. A report commissioned by Smart Growth BC concludes that the term "community need" should either be removed from the Service Plan or the legislation amended to include it but, if included, would effectively transform the ALR into an urban land reserve.¹⁵

Compliance and Enforcement Section

Most recently, the ALC has established its first ever two-person compliance and enforcement team to conduct compliance, enforcement and monitoring activities in the Agricultural Land Reserve. The purpose of the team is to ensure that the ALR is being used appropriately.

New Farm Uses

Recent applications have been made to the ALC to use farmland as the location for the conversion of agricultural wastes into energy, heat and other products through composting, incineration, gasification,

¹⁴ http://www.alc.gov.bc.ca/Legislation/Reg/ALR_Use-Subd-Proc_Reg.htm#sec1

¹⁵ <http://www.smartgrowth.bc.ca/Portals/0/Downloads/CommunityNeedreportmediarelease.pdf>

anaerobic digestion, and other technologies. ALC rules for this activity are evolving as the agency develops a rationale for permitting farmers to develop nutrient sources for farming operations without compromising the integrity of the land base for primary production.

3.2.3 Farm Practices Protection (Right to Farm) Act

This Act was introduced in 1995 to provide for better coordination between farming and non-farming neighbours and to protect farms from court action relating to nuisance complaints from normal farming activities. A "normal farm practice" is an activity "...that is conducted by a farm business in a manner consistent with proper and accepted customs and standards as established and followed by similar farm businesses under similar circumstances..."

To be eligible for protection, a farmer must be in compliance with the *Health Act*, *Pesticide Control Act*, *Waste Management Act*, the regulations under those Acts, and any land use regulation. The Farm Practices Board and review procedures are in place to determine whether the disturbance results from a normal farm practice. If the Board rules that a farm practice is not normal, then the common law rules and local government bylaws dealing with nuisance can be applied to remedy the situation.

The "right to farm" part of the Act exempts farm practices from certain local government bylaws (nuisance and miscellaneous bylaws under Sections 789(1) (a) or (b), 932 and 933). A division in the *Local Government Act* also provides for development of bylaw standards by the Ministry of Agriculture, Food and Fisheries (MAFF) and the document entitled "Guide for Bylaw Development in Farming Areas" is intended to help local governments prepare zoning bylaws and farm bylaws which support farming. The *Local Government Act* requires a local government wishing to regulate or prohibit farm operations under sections 903(5) and 917 of the *Local Government Act* to first seek approval from the Minister of Agriculture and Lands).

Recent FIRB decisions have raised concern that dangerous policy precedents are being set in the treatment of rural-urban conflicts over farming practices in BC. Of particular concern is the use of setbacks on ALR property to reduce impacts to adjacent non-farming residents resulting from normal farm practices.

3.2.4 Local Government Act

The *Local Government Act*, which succeeds the *Municipal Act*, is the key legislation defining the authority of local governments to govern local affairs for the purposes of providing good government, services, stewardship of public assets, and fostering the current and future economic, social and environmental well-being of its community.

Among the broad powers of the Act, duly constituted and administrated local governments are permitted to preserve and promote the peace, order and good government of the municipality, the health, safety, morality and welfare of its citizens, and provide for protection of persons and property. Through the process of municipal bylaw, municipal powers address farming activities through community planning; zoning; nuisance regulations; removal and deposit of soil; weed and pest control; water use and drainage. Part 26 titled Division 8 - Farm Standards and Bylaws provides for the creation of "farm bylaws" and allows for the establishing of agricultural standards for the guidance of local governments in the preparation of bylaws affecting agriculture.

Part 25 of the *Local Government Act* incorporates what was formerly the *Growth Strategies Statutes Amendment Act (1995)*. The provisions are intended to promote coordination among municipalities and

regional districts on issues that cross municipal boundaries, provide mechanisms for cooperation and coordination at the regional level, particularly in areas related to urban sprawl, air pollution, traffic congestion, loss of green space and agricultural land, and lack of affordable housing. This resulted in the development of the regional growth strategy of Metro Vancouver. While protection of agricultural land is a goal of the *Growth Strategies Amendment Act*, the Act currently has no impact on the agricultural community, except that the ALR has been accepted as important for agriculture. Agricultural goals have not been highlighted in the *Growth Strategies Amendment Act* (except for reference to agricultural land in the preamble), despite agriculture being the single largest private provincial land use (40% of private land).

Recent changes (2008) to the *Local Government Act*¹⁶ have provided local governments with additional tools for taking action on community sustainability. As a result, municipalities and Regional Districts are setting targets to reduce greenhouse gas (GHG) emissions and implementing approaches to conserve energy and create more sustainable communities.¹⁷ Agriculture has a potentially important role to play as a user of natural resources, contributor to GHGs, and provider of opportunities to meet emission reduction targets.

3.2.5 Community Charter

The *Community Charter*, which came into force in early 2004, gives fundamental powers to municipalities that replace provisions in the *Local Government Act* and will require consequential amendments to the *Local Government Act*. The Charter was created to address municipal concerns about:

- their legislative authority to fulfill areas of responsibility
- the adequacy of resources to manage those responsibilities, and
- existing requirements for Provincial approval

The stated purposes of the Act are to provide municipalities and their councils with:¹⁸

- (a) A legal framework for the powers, duties and functions that is necessary to fulfill their purposes
- (b) The authority and discretion to address existing and future community needs, and
- (c) The flexibility to determine the public interest of their communities and to respond to the different needs and changing circumstances of their communities.

The three principles promoted in the legislation are:

- Broader powers for local government, including title to roads and local parks
- Stronger and clearer recognition of the relative jurisdictions of the Province and municipalities, including commitment from the province not to download new programs on local governments, and
- “Improved public participation”, including provisions for individuals to file “counter petitions” regarding local government decisions and, with the support of 5% of the electors, to force the issue to referendum.

¹⁶ Bill 27 amendments to the Act. http://www.leg.bc.ca/38th4th/1st_read/gov27-1.htm. Also see Rutherford, S. 2009. Bill 27: Opportunities and strategies for green action by BC local governments. http://toolkit.bc.ca/sites/default/files/WCEL_Bill27_Opports_and_Strategies_for_Green_Action.pdf

¹⁷ See Robertson, T. 2008. Overview of Bill 27. Ministry of Community Services. <http://www.communityenergy.bc.ca/sites/default/files/Bill%2027.pdf>

¹⁸ See <http://www.mcaws.gov.bc.ca/charter/legislation/rd.htm>

From a regulatory perspective, a council may establish a standard, code or rule by adopting a provincial, national or international body or standards association standard, code or rule. Clearer authority is given to council under the Charter, which may, by bylaw, regulate, prohibit and impose requirements regarding:

- The health, safety or protection of persons or property
- The protection and enhancement of the well-being of its community in relation to the matters referred to in section 64 [nuisances, disturbances and other objectionable situations]
- Public health
- Protection of the natural environment
- Animals
- Buildings and other structures, and
- The removal of soil and the deposit of soil or material.

Under the Charter, municipalities may be able to introduce restrictions on farming activities if such operations can be shown to affect public health and well-being of the local community. For example, it appears that municipalities may be able to restrict cosmetic pesticide use on farmland outside the ALR in the interests of providing community benefit.

3.2.6 The BC Agricultural Plan

In 2006, the provincial government launched an industry review leading to the development of “The BC Agricultural Plan: Growing a Healthy Future for BC Families”. The plan was completed in February, 2008 and outlines 23 strategies, and 68 action items for sustaining the BC agriculture industry within 5 key themes:¹⁹

Producing Local Food in a Changing World – Promoting BC agriculture and food products to support BC producers in supplying fresh, healthy food directly to consumers; and developing a “food miles” program to create public awareness of the distance food products have been transported, and the effect on greenhouse gas emissions.

The Plan will implement a financial strategy to support various projects, including the following:²⁰

- Local agricultural products and develop a BC brand (\$1 million)
- A “Food Miles” Project to reduce GHG emissions (\$1 million)
- Expansion and delivery of the “Eat BC” program
- Direct farm sales by producing a Farmers’ Markets Directory, Farmers’ Markets Newsletter, and Farm Fresh Guides
- Community Food Action initiatives (community gardens, local farm markets)
- Community-lead food projects focusing on local production and delivery (e.g., Slow Food, pocket markets)
- Development of a wine and culinary centre
- The School Fruit and Vegetable Snack Program
- The EatSmart BC Program (focusing on food safety and healthy eating)
- A Farmer’s Market Nutrition Coupon Pilot initiative.

¹⁹ <http://www.llbc.leg.bc.ca/public/PubDocs/bcdocs/434802/2008AL0004-000208.pdf>

²⁰ See The BC Agriculture Plan: Growing a Healthy Future for BC Families.
http://www.al.gov.bc.ca/Agriculture_Plan/Agriculture_Plan.pdf

Meeting Environmental and Climate Challenges – Shifting farm practices to turn agricultural residues like plant material, animal and organic waste into renewable energy; and investing in environmental farm planning, to encourage producers to adopt more environmentally friendly ways of handling their livestock, fertilizer, farm buildings and engine emissions.

Projects of potential application to Delta include:

- Continued support for environmental farm plans (\$2 – 3 million)
- Investigating value-added options for agricultural waste management
- Developing a Provincial Agriculture Zone Wildlife Program to develop prevention , mitigation and compensation strategies (\$4 million /year)
- Assisting farmers to provide ecological goods and services and to derive benefit from their provision
- Supporting agriculture to participate in the carbon credit market
- Supporting industry to adopt technologies to reduce GHG emissions and more efficient alternative energy systems
- Policies and programs to include the needs of agriculture in provincial water management strategies.

Building Innovative and Profitable Family Farm Businesses – Supporting the agriculture industry in addressing BC's farm labour shortage; and supporting agriculture's diverse sectors in developing sector-specific strategic plans to work towards sustained profitability.

Projects with potential application to the Delta agricultural sector include:

- Working with industry to develop sector plans
- Implementing taxation changes from the Farm Assessment Review
- Filling gaps in extension services
- Establishing a BC Food and Bioproduct Technology and Commercialization Centre
- Changes in food labeling in the interests of the BC food industry.

Building First Nations Agriculture Capacity – The goal is to establish a program to certify First Nations food products prior to the 2010 Olympics; and delivering a "local foods for healthy eating" program for First Nations, including community gardens.

Bridging the Urban/Agriculture Divide - Increasing funding for agriculture in the classroom programs to reconnect children with the source of their food; and reviewing zoning bylaws and farm use bylaws to ensure the regulatory structure supports the sustainable growth of farming in BC.

Projects of potential interest to Delta agriculture include support for:

- Delivery of 4-H programs to BC youth (\$100,000)
- Agriculture in the Classroom programs, such as Agriculture in the Classroom on the Road, Spuds in Tubs, school gardens (\$100,000)
- Agriculture fairs and exhibitions
- Review of ALR to ensure the preservation of agricultural resources
- Developing information on normal farm practices to landowners adjacent to agricultural operations
- Initiating conferences and forums to increase agricultural dialogue

- Agricultural Advisory Committees and Agricultural Area Planning as mechanisms to address urban/rural interactions
- Revisions of regulatory structures to promote the growth of farming.

There is notable emphasis on the promotion of BC food products, reconnecting British Columbians with locally grown food, and ensuring the regulatory structure to support the sustainable growth of farming.

3.2.7 BC Assessment Authority and the Farm Property Tax Assessment Review

Under B.C. Regulation 411/95 (Standards for the Classification of Land as a Farm) of the *Assessment Act*, a farm is all or part of a parcel of land used for:²¹

- a) Primary agricultural production
- b) A farmer's dwelling, or
- c) The training and boarding of horses when operated in conjunction with horse rearing.

All farm structures, including the farmer's dwelling, are classified as residential.

Farm class status results in a farm assessment that reduces property taxes. As well, school and hospital taxes on farmland are reduced. Farm status is determined by meeting minimum threshold levels of income from the sale of primary agricultural products.

In December, 2007, the provincial government began a comprehensive review of British Columbia's farm status assessment policy. The review, conducted by the Farm Assessment Review Panel, has as its purpose to ensure the property assessment system is fair, equitable and supports farming in BC with clear, simple and straightforward regulations and policies.

In July, 2009, the Farm Assessment Review Panel report was released.²² The goals of the review were to:

- Simplify and streamline the regulatory and policy framework relating to farm status
- Amend split classification policies and preserve agricultural land for future generations
- Support and encourage agricultural production, from entry through retirement.

The key recommendations include:

- Lower the income thresholds for farm tax status on small farms
- Use income tax return information for farm income reporting
- Remove split classification on actively farmed property in the ALR
- Provide ability to avoid split classification on farm properties not in the ALR if farming income thresholds are met
- Adjust the length of start-up period, relative to commodity produced, so as to provide farm status in the period when farm practices are being undertaken to bring the farm into production
- Allow retired farmers to retain farm status on their residences where the farm continues to be farmed, until sale or change of use
- Exempt a greater portion of the value of farm improvements from municipal taxation.

²¹ BC Assessment Authority. Farms Classification in BC. <http://www.bcasessment.bc.ca/public/Documents/10-055%20BCA%20Farm%20Classification%20Brochure.pdf>

²² Farm Assessment Review Panel. 2009. Report. http://www.farmassessmentreview.ca/FARP_Report_July_31_2009.pdf

Some responses to the Review findings have suggested that farm tax assessment status may not be that significant a factor in encouraging designated farmland to be actively farmed, especially in areas where property demand for residential purposes is high.

3.2.8 BC Climate Action Plan

Also in 2008, the provincial government initiated its Climate Action Plan with the goal of reducing greenhouse gas emissions by 33% by 2020 and by 80% by 2050. Included in the strategy is a focus on seven sectors creating significant environmental impacts, including agriculture. In the agricultural sector, the stated objective is to “...work with the agricultural industry on strategies that may include digesters to capture methane from manure, improved fertilizer application, community biogas digestion/electricity generation projects, research on biomass fuel, green city farms and encouraging local purchase of agricultural products.”²³

While details are still unclear, there appears to be significant intent to create sustainable market, environmental and regulatory conditions where agriculture can be promoted and enhanced. Two recent fact sheets explore the impact of climate change on agriculture and the potential for farm operators to sell offset projects on farmland that will result in emission reductions and carbon sequestration.²⁴

3.2.9 BC Healthy Living Alliance (BCHLA)²⁵

This group of organizations was formed in 2003 to promote physical activity, healthy eating and living smoke-free. The BCHLA consists of 18 members and 23 networking affiliates to deliver a number of strategies to promote healthy living including:

- Healthy Eating Strategy
- Physical Activity Strategy
- Tobacco Reduction Strategy
- Community Capacity Building Strategy.

Local agriculture has the opportunity to figure prominently in the healthy eating initiatives.

3.2.10 BC Meat Industry Enhancement Strategy

The BC Meat Industry Enhancement Strategy (MIES) was formed in 2004 with the goal to enhance the licensed meat processing capacity in British Columbia. It was developed by the Ministry of Agriculture, Food and Fisheries in conjunction with industry and the BC Food Processors Association. The goal of MIES is to be all encompassing in addressing multiple meat industry needs into one strategy.²⁶

The BC Meat Inspection Regulation (MIR) came into force in September, 2007, after a 3 year transition period. The Regulation requires all meat for sale for human food in BC to come from a licensed slaughter facility and all licensed facilities must meet new requirements for handling waste and meat inspection. These requirements are significantly more stringent and more costly in terms of upgrades and new builds, with the result that some areas have lost access to slaughter services.²⁷ A transition program, developed to assist meat processors to meet the new standards, expired in 2009.

²³ <http://www.livesmartbc.ca/government/plan.html>

²⁴ See BC Agri-food sector Climate Action Initiative: Fact Sheet #1 (November 2008) and Fact Sheet #2 (November, 2008)

²⁵ http://www.bchealthyliving.ca/healthy_eating

²⁶ <http://www.bcfpa.ca/mies.html>

²⁷ BC Food Processors Briefing Note. http://www.bcfpa.ca/documents/MLAs_briefing_on_MIR.pdf

Two new license categories have been proposed to assist small scale slaughter operations. A Class D Retail Sales license would allow on-farm slaughter of a larger number of animals (1-25 animal units) for direct sale to consumers, and retail sales to secondary food establishments (e.g., restaurants and meat shops) within the boundaries of the regional district where the meat was produced. Class D licenses would be available in specifically designated regional districts. A Class E Direct Sales license would allow on-farm slaughter of a small number of animals annually (1-10 animal units) for direct sales to local consumers in rural communities that cannot support a fully licensed facility.²⁸

As part of the application process, Class D and E operators will be required to submit a food safety plan for approval, and complete food safety training.

3.2.11 BC Living Water Smart Plan²⁹

This provincial initiative establishes goals for water sustainability, including adapting to climate change and reduction of impact on the environment. The rationing of irrigation water to ranchers in the Interior in 2009 has highlighted the need for agriculture to become more careful in how it uses water and to plan for conservation and drought. A priority issue is securing water supply for ALR lands, possibly through water reserves, water licensing, and adoption of improved water use efficiency measures. Uptake of Best Management Practices (BMPs) incentives under the federal-provincial Environmental Farm Plan (EFP) is helping to defray the costs of improving water use on farms.

In March 2010, BCMAL released its Agriculture and BC Water Plan document. The strategy is to assist BC municipalities and regional districts to develop sustainable water strategies that plan for climate change, environmental protection, and agricultural irrigation needs.

3.2.12 Investment Agriculture Foundation (IAF)

Investment Agriculture administers a number of programs funded by Agriculture and Agri-Food Canada (AAFC) and the Ministry of Agriculture and Lands (MAL) that are designed to assist British Columbia's producers, processors, agri-businesses and rural communities to adapt, diversify and grow.³⁰ Most recently, alternative agricultural models and systems have gained increased access to the mainstream funding in Canada-BC agricultural funding agreements.

Agricultural Area Planning

In 2008, over 19 BC local or regional jurisdictions had completed agricultural area planning studies and a number of others are in the process of doing so to develop strategies to enhance agriculture in their areas. Since 1990, the Investment Agriculture Foundation and BC Ministry of Agriculture and Lands have provided funding and resources to assist. In jurisdictions where these plans have been completed, planning has lead to assessment of the baseline situation, identification of issues and options, and development of an action plan to implement solutions to local issues.

²⁸ BCFPA. 2010. A New Graduated Licensing Approach for Meat Production and Processing in BC.

<http://www.bcfpa.ca/story/2010/04/23/new-graduated-licensing-approach-meat-production-and-processing-bc>

²⁹ Living Water Smart. <http://www.livingwatersmart.ca/>

³⁰ See http://www.iafbc.ca/about_us/mandate.htm

Aboriginal Agriculture Initiative

This is an initiative managed by the Investment Agriculture Foundation. It is an initiative of the Agri-Food Futures Fund³¹ and \$500,000 has been allocated to fulfill the vision of Aboriginal people achieving self-sufficiency through participation in viable, diverse agri-food opportunities.³²

Agriculture Environment Initiatives

The Agriculture Environment Initiatives is managed by the BC Agriculture council and includes the Agriculture Environment and Wildlife Fund (AEWF), Agriculture Environment Partnership Initiative (AEPI) and the Agriculture Environment Stewardship Initiative (AESI).

The AEWF provides funding assistance to the agriculture industry in British Columbia to resolve key agriculture-environment issues. The fund is intended to further the environmental sustainability of the agriculture sector in BC while enhancing the viability of the industry.

The AEPI and AESI funds provide assistance in resolving environmental and wildlife issues with agriculture. They are intended to further the environmental sustainability of the agri-food sector in British Columbia while enhancing the viability of the industry.³³

Agri-Tourism Initiative

This is an Investment Agriculture Foundation initiative of the Agri-Food Futures Fund and \$650,000 has been allocated to serve the diverse range of operators offering agriculture-oriented tourism experiences to people exploring BC. Agri-tourism encompasses a wide range of activities, from accommodations and retail sales to recreational activities and farm tours.³⁴

Agroforestry Initiative

This initiative works with farmers, ranchers, woodlot owners, agroforestry product buyers and producers to achieve a dynamic, self-sustaining agroforestry industry.

Beekeeping Initiative

This is an initiative of the Agri-Food Futures Fund. \$200,000 has been allocated to support research and education projects that promote the economic viability and development of the beekeeping industry in BC.

Canadian Agricultural Adaptation Program (CAAP)

The Canadian Agricultural Adaptation Program (CAAP) is a five-year (2009-2014), \$163 million program with the objective of facilitating the agriculture, agri-food, and agri-based products sector's ability to seize opportunities, to respond to new and emerging issues, and to path-find and pilot solutions to new and ongoing issues in order to help it adapt and remain competitive.³⁵

³¹ The Agri-Food Futures Fund is a \$22.8 million joint federal/ provincial program established in 2001 as part of the Canada – British Columbia Framework Agreement on Agricultural Risk Management

³² http://www.iafbc.ca/funding_available/programs/AAI/aai.htm

³³ http://www.bcac.bc.ca/agriculture_enviro_programs.htm

³⁴ http://www.iafbc.ca/funding_available/programs/agri-tourism/Agri_tourism.htm

³⁵ <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1182366508375&lang=eng>

Environmental Farm Planning

The Canada - British Columbia Environmental Farm Plan Program renewed in July, 2009, complements and enhances the current environmental stewardship practices of British Columbian producers. The EFP program applies to all types and sizes of farm operations throughout the province. As a participant in this program, producers are able to identify their farm's environmental strengths, prioritize risks to the environment and take advantage of tools and techniques available to manage those risks.³⁶

Since the beginning of the program in 2004, some 20% of BC agricultural operators have completed a farm plan and a substantial portion of those operations have invested in environmental friendly practices and projects. Adoption of these practices is making farming operations more environmentally sustainable in BC communities.

The initiative is being delivered by the Agricultural Research and Development Corporation (ARDCORP), the program delivery agent of BCAC. The program has been subject to annual revision over its five year life.

Food & Beverage Processing

Food and Beverage Processing is an initiative of the Agri-Food Futures Fund and is led by the BC Food Processors' Association. \$1.5 million have been allocated to assist with development of the food, beverage and nutraceutical processing industry.³⁷

Food Quality & Safety

British Columbia agriculture industry's Food Quality and Safety Initiative is designed to enhance the quality and safety of B.C. food products. The initiative, a five year program, helps fund industry projects that advance the BC agri-food industry's Food Quality and Safety Strategic Plan. Since launching its first substantive project on January 1, 2005, the initiative has supported six major projects, collectively valued at nearly \$1.8 million.³⁸

Under the Food Safety Initiative (FSI), the BC Small Scale Food Processor's Association (SSFPA) is delivering an education and funding program to assist food processors to implement GMP and/or HACCP-based food safety systems.³⁹

Health Product & Functional Food

This initiative was designed to foster growth of the health product and functional food industry in BC. It serves a broad collection of industries and economic activities that includes growers, wild crafters, harvesters, processors and service providers active in the farm, marine and rangeland sectors. Collectively they produce raw, intermediate and final use plant and animal products such as botanicals, natural health products, nutraceuticals, functional foods and related products and services.⁴⁰

³⁶ http://www.ardcorp.ca/index.php?page_id=14

³⁷ http://www.iafbc.ca/funding_available/programs/FBP/FBP.htm

³⁸ http://www.iafbc.ca/what_s_new_or_media/documents/06-03-30-FQS.pdf

³⁹ http://www.ssfpa.net/index.php?option=com_content&view=article&id=13&Itemid=28

⁴⁰ http://www.iafbc.ca/funding_available/programs/HPFF/HPFF.htm

Labour Market & Skills Development

The BC Agriculture Labour Market and Skills Development Initiative (ALMSDI) fall under the auspices of the Agri-Food Futures Fund (AFFF). The AFFF is a cost-sharing industry development fund whose goals are the development and sustainability of the agri-food industry in British Columbia.

As all agriculture industries depend to varying degrees on labour, this initiative and the issues it addresses are truly cross-sectoral and are fundamental to sustainability of BC's agri-food industry. The goal of this initiative is to achieve long-term agriculture labour market stability by focusing in an integrated manner on the key attributes of the labour market.⁴¹

Livestock Waste Tissue Initiative

The Government of BC provided a one-time, \$5 million contribution in March 2005 to help slaughterhouse facility operators, renderers and meat processors dispose of specified risk material (tissues that could contain an agent that may transmit disease) and other slaughter plant waste tissue in an efficient, cost-effective manner.⁴²

Meat Transition Assistance Program

The Meat Transition Assistance Program (MTAP) is a \$4 million funding program that was announced by the Provincial government in April 2006 to assist with construction and equipment costs associated with upgrading or building slaughter facilities to the new provincial Meat Inspection Regulation.⁴³ The initiative continues to work with additional fixed and mobile facility proponents to meet new regulatory standards.

Mushroom Industry Initiative

Cultivated Mushroom is an initiative of the Agri-Food Futures Fund. \$500,000 has been allocated to strengthen the viability and development of the cultivated mushroom industry in BC through industry research and development and sector education and promotion.⁴⁴

Orchard Renovation Program

This provincial program helps orchardists replant to high density orchards and is presently being administered by the BC Fruit Growers Association.⁴⁵

Organic Sector Development Program (OSDP)

The OSDP is based on the goals of the COABC Strategic Plan (2002) and manages a fund of \$1 million to be allocated to projects that fulfill priorities of the program. The fund comes from the Agri-Food Futures Fund (AFFF). Any person or organization with an interest in the organic sector may apply provided the project addresses one of the following priorities:⁴⁶

- 45-65% of the fund allocated to projects addressing production capacity for organic agriculture
- 30-40% towards marketplace development and promotion
- 5-10% towards organic environmental stewardship

⁴¹ http://www.ardcorp.ca/index.php?page_id=31

⁴² http://www.iafbc.ca/funding_available/programs/livestock/livestock.htm

⁴³ <http://www.bcfpa.ca/mtap.html>

⁴⁴ http://www.iafbc.ca/funding_available/programs/cultivated-mushrooms/mushrooms.htm

⁴⁵ <http://www.bcfga.com/index.php?pageID=33§ionID=9>

⁴⁶ http://www.al.gov.bc.ca/organics/organics_industry/BC_Organic_Industry_Overview_dec2007.pdf

- AFFF OSDP funds are awarded up to a 50:50 (project applicant/AFFF OSDP) cost.

Poultry Biosecurity Programs

The British Columbia Poultry Biosecurity Program complements and enhances the current biosecurity practices of producers. The goal of this initiative is to assist producers to identify biosecurity risks on their farms and encourage producers to adopt beneficial biosecurity practices (BBPs) that minimize the risk of disease organisms moving onto or off poultry farms.⁴⁷

Small Lot Agriculture

This initiative was created to serve small scale producers with lots less than ten acres in size or farms with annual sales under \$50,000. It strives to bring more small lot farmland into production, improve access to local markets and strengthen working relationships within the agricultural community.⁴⁸

3.2.13 Provincial Farmer and Food Organizations

The agricultural industry consists of various provincial organizations promoting individual commodities, production systems, and the industry as a whole. In general, many provincial organizations are faced with increasingly complicated and costly issues, but with a lack of stable funding.⁴⁹ Current funding from membership is inadequate to cover the cost of organization services and activities, and other current funding arrangements are short-term or ad-hoc arrangements. The agricultural industry as a whole also suffers from “free-riders” who benefit from the work of organizations but are able to avoid paying to support them.

BC Agricultural Council

The BC Agriculture Council (BCAC) represents, promotes, and advocates for the collective interests of all agricultural producers in BC. BCAC is funded by levies collected from some 26 member producer associations and councils in BC. Programs operated by BCAC include:

- BC farmer identity card for tax exempt status
- BC biosecurity program – encouraging producers to adopt beneficial biosecurity practices
- Agriculture Environment Initiatives – to encourage adoption of stewardship practices to protect fisheries and wildlife resources, support research projects, introduce collaborative approaches to mitigate impacts, reduce wildlife impacts, increase producer and public knowledge and awareness
- BC Agriculture Labour Market and Skills Development Initiative (ALMSDI)
- BC BSE Surveillance Top Up Program – to assist CFIA to attain required level of BSE surveillance in BC
- Buy BC Program
- Administration of the Canada – BC Environmental Farm Plan Program
- Food Safety System Implementation Program
- Enterprise Infrastructure Traceability (EIT) Program
- National Water Supply Expansion Program (NWSEP).

⁴⁷ <http://www.crd.bc.ca/regionalplanning/growth/documents/KeyFacts.pdf>

⁴⁸ http://www.iafbc.ca/funding_available/programs/small-lot/small_lot.htm

⁴⁹ Schmidt, D. 2010. Ag council presses for stable funding. Country Life. April.
<http://www.countrylifeinbc.com/newspages/news2.php>

BC Marketing Boards

Where provincial marketing boards are involved in the marketing of agricultural supply managed commodities, membership, agency licensing and regulation is mandatory once minimum thresholds are reached. Regulation includes the transportation, processing, packing, storage and marketing of regulated products grown in the province of British Columbia. In return, these marketing boards administer a complex quota system designed to match production to demand of designated perishable products. Supply managed systems for dairy and the four feather sectors assuring the producer a minimum farm gate price based on cost of production calculations.

Mandatory Licensing is required by:

- BC Broiler Hatching Egg Commission
- BC Chicken Marketing Board
- BC Egg Marketing Board
- BC Milk Marketing Board
- BC Turkey Marketing Board
- BC Vegetable Marketing Commission – designated regulated vegetables and greenhouse vegetables
- BC Cranberry Marketing Commission

Commodity Councils

BC Industry Development Councils have been created in several sectors with a mandate to promote specific commodities and their use by providing information and educational services to growers, linking purchasers with producers and processors, and promoting products to the public with recipes and information about the industry. Typically, these Councils are supported by a small levy on the product grown. Some groups, such as BC Blueberry Council and BC Raspberry Council, are investigating the feasibility of creating national research agencies in order to acquire the power to levy domestic and import berries to fund export development, domestic production, food safety programs and research and development, as is done in the US.⁵⁰ Other Councils include beef cattle and wine grapes.

Producer Associations

All other producer groups are voluntary associations intended to provide producers with communication, production, marketing and organizational advantages for specific farmed products through cooperative and collective action. Association activities are paid for through membership dues. In total there are more than 150 associations in BC, of which about 20 are direct members of BCAC.

Certified Organic Associations of BC (COABC)

The purpose of COABC⁵¹ is an umbrella association for certification bodies which provides certification accreditation and leadership in the development of organic food production throughout British Columbia. The mandate of the organization is to administer the BC Certified Organic Program, to ensure program credibility, facilitate domestic and international trade, and to promote the overall growth of the organic food community in BC. COABC is a member of BCAC. Three of COABC's member organizations certify on national and international (ISO 65) level: BCARA, FVOPA and PACS. FVOPA is located in Ladner, BC. Several other organizations, not under the COABC umbrella also certify

⁵⁰ FCC Express. 2010. Fruit grower promotes national cooperation. Feb 19. http://www.fcc-fac.ca/newsletters/en/express/articles/20100219_e.asp#story_6

⁵¹ <http://www.certifiedorganic.bc.ca/search/searchbyregion.php?region=SVI>

organically grown produce and products. These include QAI, ECOCERT, OTCO, and ProCert. Some growers in Delta are certified through OTCO, which is operating out of Oregon State.

COABC provides accreditation, certification, logo and labelling, as well as administers organic extension services, the Organic Sector Development Program, and the COABC Research Fund.

BC Association of Farmers Markets (BCFM)

BCFM⁵² is an organization of producer vendors to BC farm markets. Key areas of focus are to:

- o Provide education and training to market boards, managers and vendors
- o Help promote farmers' markets to the public and key industry stakeholders
- o Educate the public to choose healthy British Columbia grown agricultural products to ensure a secure food system, to reduce the carbon footprint and to ensure the viability of farming into the future
- o Initiate and manage research and development activities
- o Delivering a unified industry voice for all British Columbia farmers' markets
- o Provide group insurance.

BC Agri-Tourism Alliance (BCATA)

BCATA⁵³ is a volunteer-run organization providing information on agri-tourism destinations in the province. In 2005, the organization issued an AgriTourism Code of Standards to standardize practices in the sector. The Code recommends the adoption of Quality Assurance Programs in providing products and services to promote growth in the BC agri-tourism industry, focusing on:

- Business operations
- Hospitality and Customer Service
- Safety and Risk Management
- Professionalism
- Accessibility
- Environmental Impacts
- Partnerships.

BC Food Systems Network (BCFSN)

BCFSN⁵⁴ is a provincial organization concerned about sustainable food systems, local food security, food access, and food policy. The organization has developed a toolkit to increase the public dialogue at the provincial level on local food systems.

BC Food Processors Association (BCFPA)

BCFPA⁵⁵ is a not-for-profit organization dedicated to represent all segments of the food, beverage and nutraceutical processing industry, including micro, small, medium, and large processing companies. The association recently undertook an extensive re-assessment of its position and developed a strategy to make itself more relevant to BC food processors in BC. Services provided to members include:

- BC Hydro Power Smart Program
- BCFPA Risk Management

⁵² <http://www.bcfarmersmarket.org/about.htm>

⁵³ <http://www.agritourismbc.org/theislands.htm>

⁵⁴ <http://fooddemocracy.org/about.php>

⁵⁵ <http://www.bcfpa.ca/>

- Member benefits package

BCFPA is currently delivering the Meat Industry Enhancement Strategy and the Meat Transition Assistance Program.

Small Scale Food Processing Association (SSFPA)

SCFPA⁵⁶ is a provincial association of small food-based businesses. It delivers education and offers funding to food processors to implement GMP and/or HACCP-based food safety systems through the Food Safety Systems Implementation (Processor) Program. Other initiatives of the organization include:

- Development of a BC Specialty Food Directory of small scale processors
- Assistance with Food Safety: Education and Funding
- Maintenance of its website
- Promotion of industry information, resources and training materials for the processing sector.

Most recently, the SSFPA is actively assisting entrepreneurs in starting small scale food processing businesses. A course is offered that takes operators step-by-step through modules dealing with the most formidable challenges and hurdles facing start-ups including: business planning; food processing and regulations; assessing the market; product development; labelling and packaging; distribution and promotion; and pricing.

Eat BC⁵⁷

Eat BC is an initiative of the BC Restaurant & Foodservices Association (BCRFA) and the BC Agriculture Council (BCAC), listing of regional Farms, Ranches, Fishers and Processors.

3.3 Regional Context for the Agricultural Plan

Metro Vancouver (MV), formerly known as The Greater Vancouver Regional District (GVRD), is the regional government for 22 municipalities, one electoral area, and one treaty First Nation situated in the western end of the Lower Fraser Valley of BC. Delta is within MV and therefore falls under the Regional Growth Strategy and other policies of the Regional District (see Figure 2-1). Delta represents 16.3% of the ALR in the MV⁵⁸, 18% of its area farmed, 4.3% of its population, 4.9% of its total tax filer income,⁵⁹ and 26% of its farm gate receipts.⁶⁰

3.3.1 MV Regional Growth Strategy

The strategic plan for the MV region is the Liveable Region Strategy which was developed in the early 1990's. Over the past several years, MV has been working on a Regional Growth Strategy (RGS) that sets out a vision and strategy for the management of growth for the region - *Metro Vancouver 2040 - Shaping our Future (Draft - November 2009)*. As of late November 2010, the Metro Vancouver Board has referred the Greater Vancouver Regional District Regional Growth Strategy Bylaw No. 1136, 2010 to

⁵⁶ <http://ssfpa.net/>

⁵⁷ Eat BC. <http://www.eatbc.com/local-food/regions/6/farms?page=2>

⁵⁸ Metro Vancouver. 2009. Agriculture and the Regional Growth Strategy.

<http://www.metrovancouver.org/planning/development/agriculture/AgricultureDocs/AgricultureBackgrounderMarch09.pdf>

⁵⁹ BC Stats, Taxation Statistics 2006. <http://www.bcstats.gov.bc.ca/data/dd/handout/06txhand.pdf>

⁶⁰ Statistics Canada. 2005 Agriculture Census.

a Public Hearing to be conducted in the remainder of 2010, with acceptance and adoption by local governments anticipated in early 2011.⁶¹

The Vision of the draft RGS⁶² is based on principles of sustainability (The Sustainability Initiative). The RGS outlines several challenges facing the region including one for agricultural and food sustainability:

Protecting Agricultural Land to Support Food Production

“Comprising over 50,000 hectares of the region, agricultural lands are an important asset. The heightened importance of producing fresh, regionally grown food to meet economic, environmental, health and food security objectives reinforce the need to protect the region’s rich agricultural lands. The challenge for the Regional Growth Strategy is to protect the agricultural land base and to encourage its active use for food production.”

The Regional Growth Strategy also includes five overarching goals for the region. Agriculture is a key component of Goal 2: Support a Sustainable Economy. The goal states:

“The land base and transportation systems required to nurture a healthy business sector is protected and supported. This includes supporting regional employment and economic growth. Industrial and agricultural land is protected and commerce flourishes in Urban Centres throughout the region.”

Despite the articulation of goals including agriculture, there is concern in some quarters that agricultural land remains at risk. The “Rural Lands” designation in the RGS includes land in the ALR, and the most recent version has wording that places no limit on the non-agricultural development proposed for rural lands. In addition, a substantial amount of the “Special Study Areas” (a new concept – it didn’t exist in the previous Livable Region Strategy) are also in the ALR. Where previously a two-thirds board majority and a regional public hearing were required to change land use in the former Green Zone, under the new RGS Special Study Area lands may be changed a land use other than agriculture with 50% plus 1 vote and no regional public hearing.

⁶¹ See Metro Vancouver. The RGS Process.

<http://www.metrovancouver.org/planning/development/strategy/Pages/FeedbackComments.aspx>

⁶² Regional Growth Strategy Bylaw No. 1136, 2010. Metro Vancouver 2040: Shaping Our Future.

http://www.metrovancouver.org/planning/development/strategy/RGSDocs/RGSNov12_1stand2ndreading.pdf



Figure 2-1: Location Map of Delta in the Metro Vancouver Regional District of BC

(Source: http://www.bcstats.gov.bc.ca/data/sep/rd/rd_15.pdf)

Land use designations in the draft RGS include both Agricultural and Rural. The Agricultural designation covers the ALR while Rural includes both farming and non-farming uses in non-urban areas.

The following two strategies are key approaches for protecting and enhancing agriculture in the region.⁶³

STRATEGY 1.3

Protect rural lands from urban development

STRATEGY 2.3

Protect the supply of agricultural land and promote agricultural viability with an emphasis on food production.

⁶³ Regional Growth Strategy Bylaw No. 1136, 2010. Metro Vancouver 2040: Shaping Our Future.
http://www.metrovancouver.org/planning/development/strategy/RGSDocs/RGSNov12_1stand2ndreading.pdf

3.3.2 Metro Vancouver Regional Food System Strategy (RFSS)

As part of the Sustainable Region Initiative, Metro Vancouver is collaborating with its residents and sectors on how to build a resilient regional food system. In 2009, the MVRD sponsored a Food Connections Symposium, bringing together people involved in the food system. Also in 2009, a plan for Colony Farm Regional Park was developed through public consultations that put forward the concept of an “Academy for Sustainable Food Production”.⁶⁴ The final RFSS, containing a framework for action, will be presented to the Metro Vancouver Board in 2010.

Metro Vancouver is advised in agricultural matters by an Agricultural Committee. The committee consists of political representatives from the member municipalities and directors recruited from the farming community. The Agricultural Committee is, in turn, advised by an Agricultural Advisory Committee that has a majority of farmer members.

3.3.3 Community Food Charters

A food charter is a statement of values and principles to guide a community’s food policy. A number of local jurisdictions have created Food Charters in support of food systems in which food production, processing, distribution, consumption and recycling of organic waste are integrated to augment environmental, economic, social and nutritional health.

The principles upon which Food Charters are being created and adopted include:⁶⁵

- Safe and nutritious food is available within the region for all residents;
- Access to the safe and nutritious food is not limited by economic status, location, or other factors beyond a resident's control;
- There is a local and regional agriculture and food production system which supplies wholesome food to the region's residents on a sustainable basis;
- All residents have the information and skills to achieve nutritional well-being.

In addition, there are at least 27 regional food security policy organizations in BC dedicated to creating a sustainable, just local food system in which farmers can make a living and nobody goes hungry. Some of these organizations have a presence in Delta. This orientation toward integrating local food production into social and cultural objectives would be anticipated to create more market opportunities for agricultural producers wherever such an initiative is pursued.

3.3.4 Community Food Action Initiative (CFAI)

The Community Food Action initiative is an initiative aimed at increasing food security for all British Columbians, particularly those living with limited incomes. The CFAI is a collaborative effort of the Provincial Health Services Authority, five regional health authorities and the Ministry of Healthy Living and Sport, recognizing the links between healthy eating, obesity and chronic disease.

The initiatives include the development of a resource guide to local governments on how to promote food secure communities by supporting community gardens, farmers’ markets, local food production, and encouraging healthy food choices.⁶⁶ The CFAI has also entered into partnerships with the BC Health

⁶⁴ http://www.metrovancouver.org/boards/Agriculture%20Committee/Agriculture-October_8_2009-Agenda.pdf

⁶⁵ See The BC Food Systems Network. <http://www.fooddemocracy.org/policy.php> The Vancouver Food Charter is found at http://vancouver.ca/commsvcs/socialplanning/initiatives/foodpolicy/tools/pdf/Van_Food_Charter.pdf

⁶⁶ See Provincial Health Services Authority. 2008. A Seat at The Table: Resource guide for local governments to promote food secure communities. <http://www.phsa.ca/NR/rdonlyres/76D687CF-6596-46FE-AA9A-A536D61FB038/29298/PHSAreportaseatthetable4.pdf>

Living Alliance, a collaborative effort of organizations pursuing a Healthy Eating Strategy, which has developed various community programs including the Healthy Food and Beverages at School, Work and Play, the Farm to School Salad Bar, Food Skills for Families, and Sip Smart!

3.3.5 The Land Conservancy of BC (TLC)

TLC is a non-profit organization active through its Community Farms Program, partnering with Farm Folk/City Folk, promoting efforts to bring landowners, farmers and local communities together to encourage access to farmable land.⁶⁷ The TLC has participated in land acquisition for community farming on Vancouver Island.

3.3.6 Farm Folk/City Folk Society (FF/CF)

FF/CF is a not for profit society located in the Lower Mainland that has since 1993 been engaged in cultivating a local, sustainable food system.⁶⁸ The organization has several initiatives geared towards providing access to food lands, supporting local growers, and engaging communities in the celebration of food.

Current initiatives include:

- Farm projects – community farms program, seed security, grain chain
- Farm-city projects – Get Local, Brian Harris photography project, Feast of Fields, Incredible Edible tours, Seasonal Sustainability series, Farm Kids/City Kids
- City projects – Urban chickens, Trout Lake Cottage Food Security Network, 100 Mile Diet Society – Eat Your History, Backyard Bounty
- Education projects – Knowledge Pantry, community outreach, library, newsletter, e-bulletins.

Funding is generated through membership, sponsors, and Feast of Fields events, where local foods and culinary arts are featured at local farm venues.⁶⁹

3.3.7 Get Local Business Alliance⁷⁰

Get Local promotes local food in the MVRD. It maintains an “Eat Local” newsletter. Funds are raised from its members who include various regional organic food producers, processors, food groups, restaurants, distributors and retailers.

3.3.8 NowBC (Neighbours Organic Weekly)⁷¹

Formed in 2008, the co-op started as a buying club for members wishing to obtain local organic food products. It now features an on-line organic farmers market that supports small farms and processors in the Metro Vancouver region. NowBC also supports CityReach Care Society’s “Food for Families” Food Bank Program. About 50% of the work carried out by NowBC is done by volunteers.

3.3.9 Local Food First⁷²

This organization consists of 7 local food sector professionals from business, non-profit and academic backgrounds. Its mission is to increase the supply and consumption of local food. Local Food First has participated in several initiatives including: helping to organize “Meet You Maker” conferences;

⁶⁷ <http://blog.conservancy.bc.ca/agriculture/community-farms-program-for-bc/>

⁶⁸ Website <http://www.ffcf.bc.ca/>

⁶⁹ In 2010, Wellbrook Winery at Bremner Farms in Delta hosted this event.

⁷⁰ Eat Local. http://www.getlocalbc.org/en/news_events.php

⁷¹ NowBC Co-op. <http://www.nowbc.ca/>

⁷² Local Food First. <http://localfoodfirst.org/about-us/>

developing a value chain for imperfect tomatoes, and capital fund raising for a permanent New City Market in Vancouver's core.

3.3.10 Fraser Valley Farm Direct Marketing Association (FVFDMA)⁷³

This is an organization that has promoted and developed farm direct marketing since 1993. The FVFDMA supports to member farmers by:

- Publishing a Farm Fresh Guide, which is distributed across the Lower Mainland, and listing all member farms with descriptions, locations, and a product index
- Maintaining a website to put consumers in touch with growers
- Providing an Agriculture Mentoring Program giving access to experienced farmers by those wishing to start a farm operation
- Establishing a network of farm direct marketers with wide ranging experience
- Creating opportunities for joint marketing initiatives.

3.3.11 Fraser River Estuary Management Program (FREMP)

Established in 1985, FREMP is an inter-governmental partnership to coordinate the environmental management of aquatic ecosystems of the Fraser River Estuary in the Lower Mainland of BC (Figure 2-2). Partners include Environment Canada, Fisheries and Oceans Canada, Transport Canada, British Columbia Ministry of Environment, Metro Vancouver, and Port Metro Vancouver. The objectives of FREMP are:⁷⁴

- Conserve and enhance the environmental quality of the river and estuary to sustain healthy fish, wildlife, plants and people
- Respect and further the estuary's role as the social, cultural, recreational and economic heart of the region, and
- Encourage human activities and economic development that protect and enhance the environmental quality of the estuary.

A key component of FREMP efforts to coordinate the environmental management of the Fraser River estuary is the partnership's review of proposals for shoreline development and other activities in these marine ecosystems.

The Program has also developed targets for environmental protection, environmental quality, and liveability that extend to areas beyond FREMP boundaries over the wide range of human activities. Agriculture's impact on fish and wildlife habitat and water quality are concerns for the Fraser River. The FREMP area of jurisdiction is shown in Figure 3-1.

⁷³ FVFDMA. <http://www.bcfarmfresh.com/>

⁷⁴ FREMP is guided by the Estuary Management Plan (EMP), "A Living Working River" created in 1993 and updated in 2003. http://www.bieapfremf.org/fremf/pdf_files/f_emp_complete.pdf



Figure 3-1: Fraser River Estuary Management Program Area of Jurisdiction.

(Source: Delta Official Community Plan)

4.0 Local Context for Delta Agricultural Planning

Delta is bordered by Surrey to the east and the US (Pt. Roberts) to the south. In relation to water, Delta is bordered by the Fraser River to the north, the Georgia Strait to the west, and Boundary Bay to the south. Delta is located 27 km south of Vancouver and 22 km from the US border at the Peace Arch crossing in Surrey. There are three main communities consisting of North Delta (pop. 52,000), Ladner (23,000) and Tsawwassen (23,000), and rural area (2,500) with the total population of Delta being about 101,000 people in 2010.⁷⁵ The Tsawwassen First Nation lands and Musqueam Indian Reserve No. 4 are bordered by Delta.

Delta is one of the larger farming jurisdictions in Metro Vancouver, containing about 18.3% of the farmland area. The area was settled by farmers in the 1860's and descendants of these first settlers continue to farm in the community today. Historically, Delta was somewhat isolated from growth and development in the Lower Mainland because of its geography and location relative to the Fraser River and transportation networks to Vancouver. As a result, fishing and farming developed as the main economic drivers. Land use has remained predominantly agrarian although several significant developments have created incremental and cumulative pressures on farming.

Today, while farming continues to be the dominant land use, the municipality is largely a suburban community with a strong industrial base. Of the municipality's total land and water area of 395.9 square kilometers, about 24% (9,403 ha)⁷⁶ is contained within the ALR. Of that, 560 ha represent rights of ways and foreshore, leaving a farmland base of 8,843 ha. Figure 4-1 presents the location map of Delta's agricultural land reserve.

In 2010, the area associated with farming activities in Delta is 8,100 ha (see Table 5-3, below), including a limited amount of farming activity (196 ha) that also occurs outside the ALR.⁷⁷ This leaves approximately 16% of the ALR that is used for wildlife and environmentally sensitive areas and non-farm purposes.

A comparison of Figure 4-1 with Figure 4-2 shows the various non-farm uses that are planned in the ALR, accounting for about 16% of its area. It is important to note, however, that Figure 2 is the map of future land use in the OCP and indicates areas of the ALR that are not designated as "agricultural". These areas include the wildlife areas, airport, recreational areas, golf courses, environmentally sensitive areas, landfill, and other non-farm uses.

⁷⁵ This estimate is derived from various sources including BC Stats.

<http://www.bcstats.gov.bc.ca/data/pop/pop/dynamic/PopulationStatistics/SelectRegionType.asp?category=Health>

⁷⁶ This is a number provided to BCMAL by the ALC in 2010,

⁷⁷ This includes cultivated land, farm infrastructure, greenhouses, and non-agricultural cover, and excludes land recently lost to transportation projects and the Tsawwassen First Nation treaty settlement.

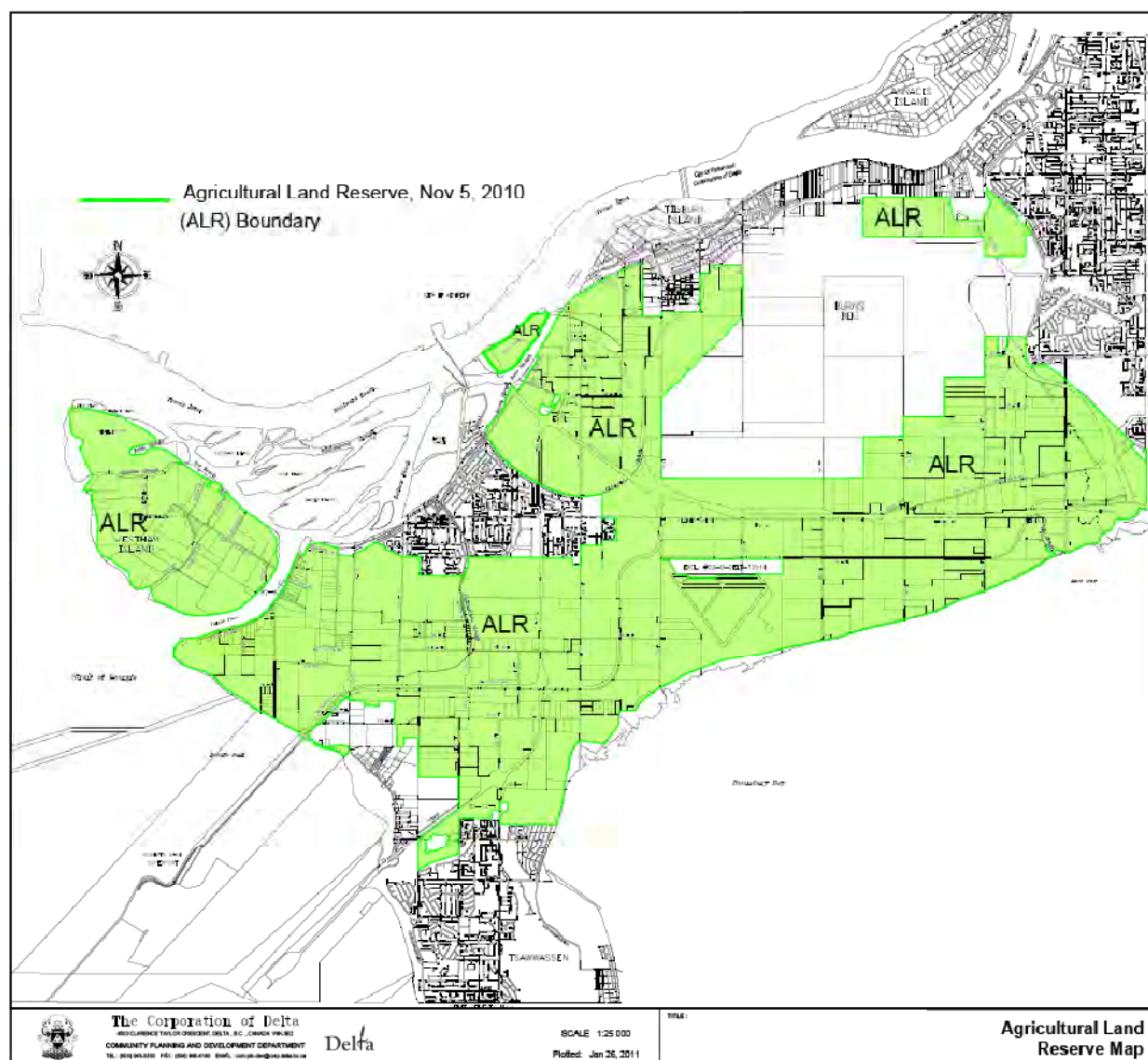


Figure 4-1: Location of the Agricultural Land Reserve, Delta, 2005

(Source: Corporation of Delta)

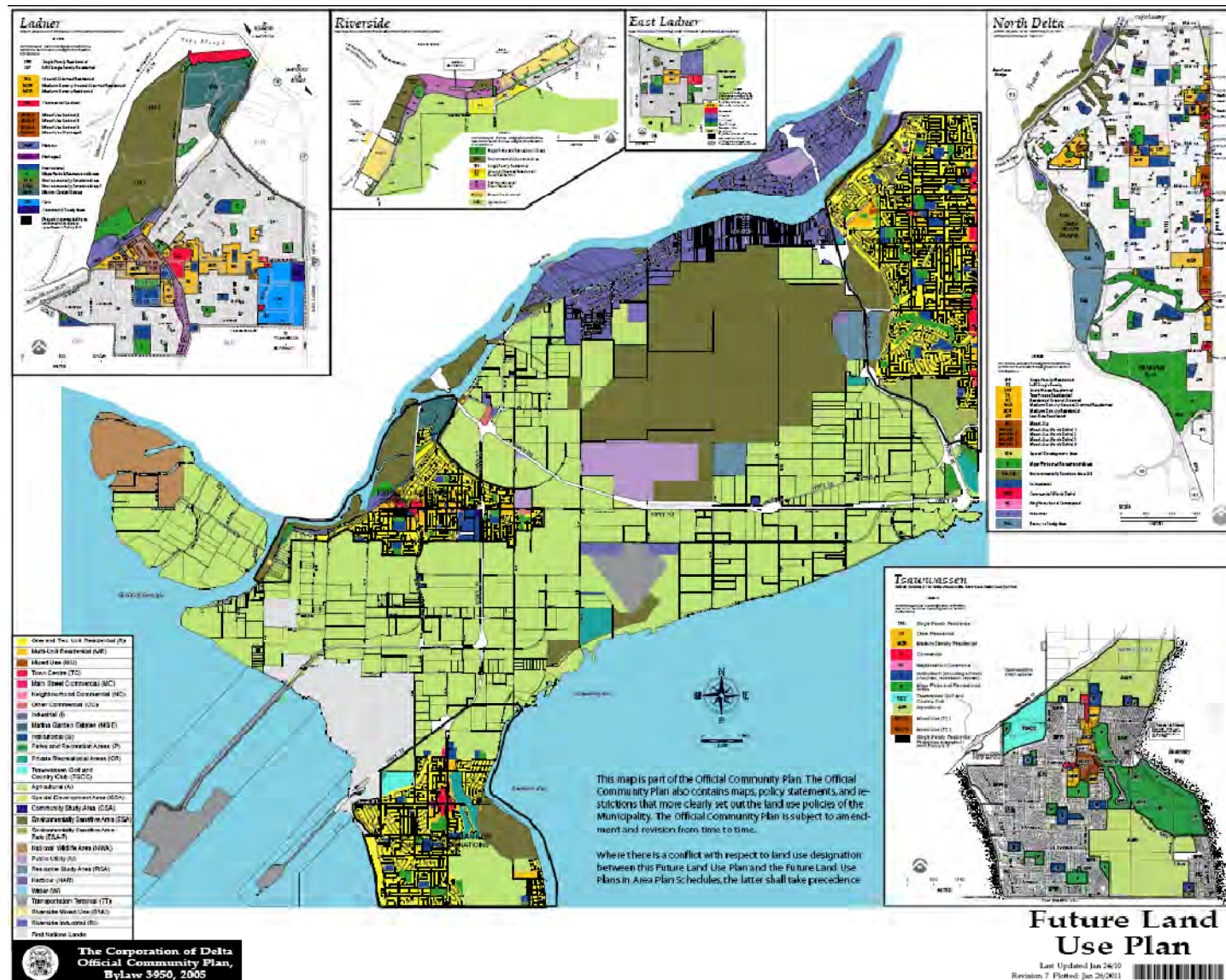


Figure 4-2: Future Land Use Plan, Delta
(Source: Corporation of Delta)

Beginning around 1959 with the completion of the Massey Tunnel, Delta became accessible by road from Vancouver and points north of the South Fraser arm almost instantaneously. As a result, Delta's population grew 6 fold between 1961 and 1991, or by an average compound rate of about 6% per year. Since 1991, population growth has been about 13%, or a rate of less than 0.5% per year (see Figure 4-3). Delta's population is about 4.3% of the population of Metro Vancouver. Table 4-1 presents a chronology of selected events that have shaped Delta's agricultural development.⁷⁸

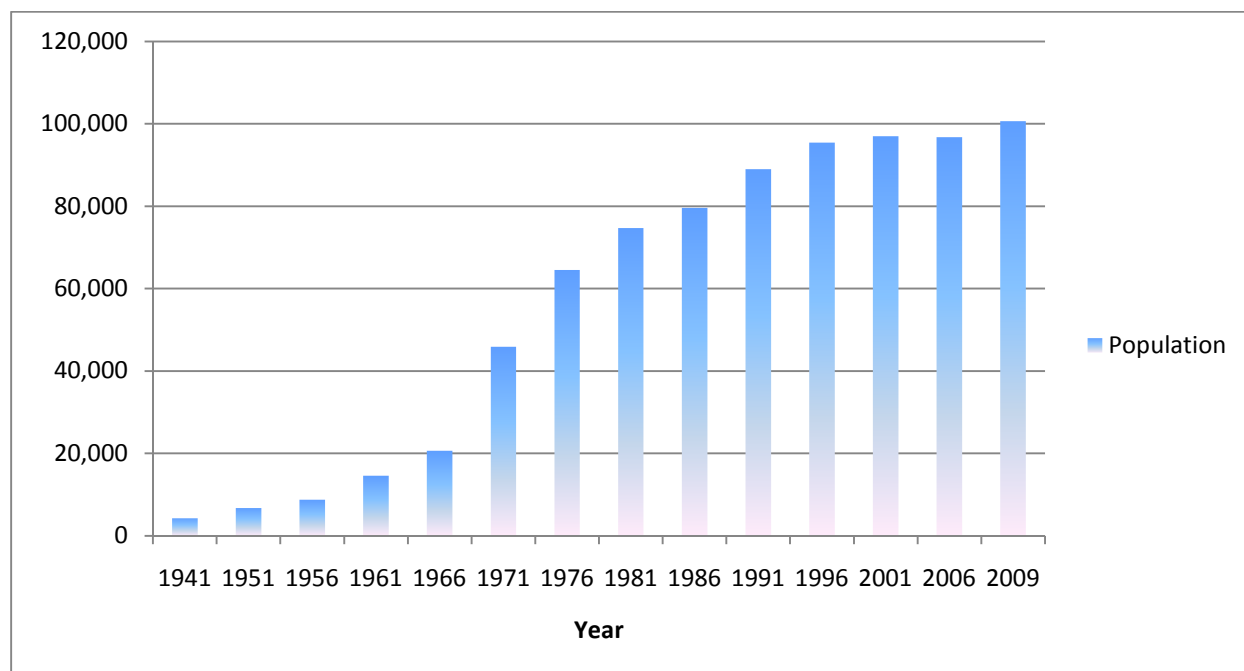


Figure 4-3: Delta Population Growth, 1941 to 2009.

(Source: BC Stats <http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>)

⁷⁸ See Hemmera Envirochem Inc. 2004. History of Development at Roberts Bank – An Overview. www.portmetrovancouver.com/...deltaport.../ea_app_appendixa_dec-04.sflb.ashx

Table 4-1: Selected Events Related to Delta's Agricultural Development

Era	Date	Event
1850's	1858	BC proclaimed a Crown colony of Britain
1860's	1868	Ladner brothers become first farmers in Delta
1870's	1871	BC enters Confederation
	1873	First salmon cannery opened on Deas Island
	1877	Fraser Valley surveyed into six-square-mile townships
	1879	Municipality given the name of Delta
1880's	1882	Opening of the New Westminster Farmers market
	1887	CP Railway arrives in Vancouver
1890's	1891	BC Department of Agriculture created
	1892	New Westminster Southern Railway connects New Westminster, Cloverdale and Blaine, Washington
	1897	Queensborough Bridge joins New Westminster to Lulu Island and Richmond BC Farmers Institute created Delta agricultural products marketed throughout the Lower Mainland by stern wheeler and rail
	1898	Delta Farmers' Institute formed
1900's	1904	New Westminster Bridge joins Surrey and New Westminster
1940's	1941	Opening of Royal Canadian Air Force Station Boundary Bay to train WWII pilots
1950's	1959	Completion of the George Massey Tunnel linking Ladner to Richmond
1960's	1960	Opening of the Tsawwassen Ferry Terminal, the first route run by BC Ferries Highway 17 completed between Tsawwassen Ferry Terminal and River Road
	1962	Opening of Highway 99 and rerouting the King George Highway in Surrey through Delta
	1968	HVDC Vancouver Island hydroelectric transmission line from through Delta went into operation 4,000 acres of Back-up Lands expropriated for the purposes of providing an industrial area for the Roberts Bank Development Project
	1969	37 km BC Harbours Board Railway is built, connecting Roberts Bank Superport to three class 1 railways
1970's	1970	Opening of Roberts Bank Superport Coal Port Facility (now Westshore Terminal) on Pod 1, built on 20 hectares of reclaimed land
	1972	First CP coal unit train arrives at the Roberts Bank Superport from Sparwood, BC Designation of the George C. Riefel Migratory Bird Sanctuary and the Alaksen National Wildlife Area on Westham Island, the largest migratory bird wintering area and largest estuarine habitat on the Pacific coast of Canada (300 ha)
	1973	Agricultural Land Reserve promulgated in BC legislature
1980's	1982	Alaksen National Wildlife Area recognized as a wetland of international significance (RAMSAR)
	1983	Opening of Boundary Bay Airport, now the busiest training airport in Canada (number of airplane movements)
	1983/84	Expansion of Roberts Bank Coal Port Facility (Pod 2)
	1985	Inception of Fraser River Estuary Management Program (FREMP), including Roberts Bank and Boundary Bay
1990's	1986	Completion of the Alex Fraser Bridge connecting North Delta to New Westminster
	1991	Expansion of Tsawwassen Ferry Terminal Designation of South Arm Marshes as a Wildlife Management Area (937 ha)

Era	Date	Event
	1995	Designation of Boundary Bay as a provincial Wildlife Management Area (11,470 ha)
	1996	Greater Vancouver Regional District endorses the Livable Region Strategic Plan (LRSP), with inclusion of much of Delta's non-urban area into the Green Zone. ⁷⁹
	1997	Opening of Deltaport container terminal (Pod 4)
	1998	Expansion of Deltaport Way to handle increased container traffic (loss of 8.8 ha of farmland)
2000's	2000	Expansion of the Deltaport container terminal (Pod 3)
	2001	Fraser River estuary declared an Important Bird Area (IBA) by Bird Life International, a global partnership of conservation organizations and represented in BC by BC Nature and Bird Studies Canada
	2004	Fraser River foreshore and selected provincial and federally owned lands named a Hemispheric Site in the Western Hemisphere Shorebird Reserve Network
	2008	Vancouver Fraser Port Authority (Port Metro Vancouver) established, amalgamating management of 28 marine terminals in the Vancouver area
	2009	Completion of negotiations of the Tsawwassen Treaty with Tsawwassen First Nation, resulting in the transfer of 207 ha for industrial development and options to purchase 278 ha of crown owned farmland ⁸⁰
2010's	2010	Deltaport container terminal adds a third berth (Terminal 2), doubling capacity, and utilizing a further 50 acres of backup lands
	2012	Anticipated opening of the 40 km South Fraser Perimeter Road (SFPR), linking Deltaport Way to the Trans Canada Highway, taking 90 ha of the farmland base
	2011/2015	Proposed projects under the Roberts Bank Rail Corridor Program affecting Delta include a rail overpass at 41B Street to serve local agricultural and First Nations access, and a rail overpass at 80th Street to service Boundary Bay Airport

4.1 Delta Official Community Plan (OCP)⁸¹

Municipalities are required to prepare Official Community Plans (OCP) that set out the overall goals and direction of the municipality with regard to land use and other important community related topics such as housing, industry, parks and recreation, commercial business and environment. Delta's first OCP was completed in 1986 and was revised in 2005 following extensive consultation. The OCP is implemented

⁷⁹ These areas in Delta include:

- All lands in the Agricultural Land reserve including streams, ditches and sloughs in the agricultural area
- The Fraser River foreshore and its various channels, excluding the foreshore immediately adjacent to Ladner Village and Port Guichon
- Dikes, foreshore, intertidal areas and accreted lands outside the dikes in Boundary Bay along the Georgia Strait
- Delta Nature Reserve and Boundary Bay Regional Park
- All of Burns Bog and the Vancouver Landfill
- Roberts Bank and the South Arm marshes, Wildlife Management Areas including Ladner Marsh and sloughs, and the Alaksen National Wildlife Area
- Drainage ditches along River Road East and sloughs along or draining into the Fraser River and adjacent wetlands, including Chilukthan Slough and Crescent Slough
- The Southlands area of Tsawwassen

⁸⁰ The Tsawwassen First Nation Final Agreement.

http://www.gov.bc.ca/arr/firstnation/tsawwassen/down/final/tfn_brochure.pdf

⁸¹ The Corporation of Delta, Official Community Plan, 2005 as amended.

through bylaws such as zoning, plan reviews and policy planning. The OCP must also include a Context Statement which is meant to demonstrate how the OCP meets the goals, objectives and policies of the Liveable Region Strategic Plan for Metro Vancouver (the Greater Vancouver Regional District).

Six goals are included in the OCP that are intended to create a community that is:

- *Livable Delta will be sustainable, healthy and safe, and a place in which today's quality of life will also be enjoyed in the future.*
- *Complete Delta will be a community in which people of all ages, family structures, backgrounds and interests can live, work and play.*
- *Green Delta will protect the natural environment, agricultural lands, and heritage features.*
- *Planned Delta will foster development in a planned and integrated manner that respects natural systems, manages urban growth, preserves built and natural heritage provides transportation choices and reinforces neighbourhood identity.*
- *Prosperous Delta will provide a wide range of economic opportunities and sustain a healthy and diverse economy.*
- *Involved Delta will balance competing interests and values, maintain fairness and equity and involve all residents and stakeholders in decision-making processes.*

4.1.1 Agriculture Objectives

Delta's OCP recognizes the importance of agriculture within the community and issues facing the industry. Section 2.5 of The Official Community Plan contains several objectives and policies to promote and guide agriculture and to assist with reducing conflicts with other land uses. It is important to recognize that many regulatory aspects of the agricultural industry come under Provincial jurisdiction (i.e., lands within the Agricultural Land Reserve).

Delta's OCP contains seven agricultural objectives and related policies dealing with:

Objective 1:

Protect the agricultural land base and lands included in the Agricultural Land Reserve.

Policies:

- 2.5.1 Recognize farming as the primary use of agricultural land.
- 2.5.2 Maintain the parcel size of Delta's agricultural land and encourage consolidation of agricultural parcels to increase parcel size, rather than fragmentation of agricultural lands.
- 2.5.3 Support initiatives that reinforce farm use of agricultural land and the continued development of a viable agricultural industry.
- 2.5.4 Use Agriculture Impact Assessments to quantify the impacts of a proposed development, rezoning, subdivision or non-farm use on the ALR, farmed lands or lands adjacent to farmed lands. Require mitigation for possible impacts.

- 2.5.5 Consider alternate non-agricultural sites when recreational, institutional, industrial, commercial uses or utility facilities are proposed for agricultural areas.
- 2.5.6 Continue to work with the Ministry of Agriculture, Food and Fisheries, the Provincial Agricultural Land Commission and other appropriate stakeholders and organizations to determine the maximum threshold for greenhouses and other non-soil dependent farming operations that preserves a critical mass of land for soil based agriculture.
- 2.5.7 Encourage non-soil dependent farm operations to locate in areas of poorer soils and minimize the impacts of these operations (e.g. air and light pollution).

Objective 2:

Minimize conflicts at the urban-rural interface.

Policies:

- 2.5.8 Encourage farmers to undertake the highest standard of management practices for activities that may result in noise, dust, smell, light or other nuisances, particularly if located near the urban boundary.
- 2.5.9 Undertake a public awareness program to inform non-farm residents about normal farm practices and urban activities that may result in difficulties for farmers.
- 2.5.10 Consider urban-rural edge planning initiatives, such as Development Permit Guidelines for the urban side.

Objective3:

Diversify farm operations to support agricultural viability and sustainability.

Policies:

- 2.5.11 Support economic diversification initiatives accessory to and compatible with farming that add value to locally produced farm products.
- 2.5.12 Work with the Ministry of Agriculture, Food and Fisheries, the Provincial Agricultural Land Commission and other farm stakeholders to determine and encourage appropriate economic diversification initiatives.
- 2.5.13 Ensure agricultural processing industries that locate in agricultural areas are consistent with the Ministry of Agriculture, Food and Fisheries and the Provincial Agricultural Land Commission legislation, regulations or policies.
- 2.5.14 Encourage businesses that support and service farming to locate in Delta.

Objective 4:

Ensure the appropriate size and siting of farmhouses and additional farmhouses in agricultural areas.

Policies:

- 2.5.15 Develop zoning regulations that minimize the negative impacts of dwellings on farmland and locate them to minimize servicing costs and promote clustering.
- 2.5.16 Ensure additional farm houses are necessary for farm use or retired farmers, as permitted in Agricultural Land Commission legislation, regulations, or policies.
- 2.5.17 Consider incentives that encourage the preservation of heritage buildings on the same site.

Objective 5:

Balance the interests of agriculture, the protection of the environment and the co-operative management of the Fraser River delta ecosystem.

Policies:

- 2.5.18 Encourage cooperative decision-making for agricultural-environmental issues.
- 2.5.19 Encourage initiatives, including best management practices that support both farming and wildlife, protect against soil erosion and degradation, and maintain water quality and hydrological functions on agricultural land.
- 2.5.20 Support and if appropriate participate in studies to determine the impacts of greenhouses and other agricultural and non-agricultural development on the Pacific Flyway, and study the impacts of waterfowl on agricultural lands.
- 2.5.21 Recognize and protect environmentally significant areas of farmland, including hedgerows, stands of trees, old fields, watercourses and other sensitive areas.
- 2.5.22 Continue to support programs that mitigate and compensate for crop damage from migratory birds and on-farm stewardship activities such as set asides, and hedgerows.
- 2.5.23 Minimize the negative impacts on farming and wildlife habitat when new agri-tourism, transportation and utility corridors, regional recreational opportunities and other economic initiatives are being developed.
- 2.5.24 Encourage farmers to prepare Best Management Practice Plans and Environmental Farm Plans.
- 2.5.25 Encourage other levels of government and non-government agencies to implement habitat initiatives on agricultural land in cooperation with farmers.

Objective 6:

Recognize recreational uses that are compatible with agriculture.

Policies:

- 2.5.26 Work with the GVRD, user groups, and stakeholders to educate recreational users of private property rights, the implications of trespassing on farmland, nuisance activities for farming, and security concerns of the farm community.

- 2.5.27 Support planning initiatives that minimize conflicts between recreational and farm users.
- 2.5.28 Encourage the equestrian community and commercial stables to provide training and other initiatives for horse riders using public roads to reduce possible conflict with farm and non-farm vehicles.

Objective 7:

Continue to strategically plan for agricultural land use.

Policies:

- 2.5.29 Consider updating the Delta Rural Land Use Study (1994).
- 2.5.30 Continue efforts to provide up-to-date agricultural regulations that support farming in Delta.
- 2.5.31 Support efforts to coordinate federal, provincial and municipal agricultural regulations.

The agricultural designated lands are primarily those that are contained within the ALR. Agricultural lands are found within most areas of Delta, but are most prevalent in the central, southern and western portions of the municipality. The residential (urban) land uses are concentrated in North Delta, Ladner and Tsawwassen. Over the years, the agricultural land base of Delta has become fragmented, largely due to transportation projects such as the construction of Highway 17 to connect with the BC Ferries terminal at Tsawwassen; railroad and highway construction for Deltaport (Roberts Bank marine terminal) and the proposed Gateway Highway Project (South Fraser Perimeter Road) to connect the BC Ferry Terminal with other major transportation routes to the east of Delta.

Over the years agricultural land has also seen encroachment from residential, commercial and industrial development, institutional and recreational use and golf course construction. Given Delta's geographical location (surrounded by water on three sides) within the Fraser River Estuary and adjacent to the Strait of Georgia and Boundary Bay, it contains extremely valuable habitat for migratory birds. It is a key component of the Pacific Flyway, a world class migratory route and stopover for waterfowl flying between Asia and South America to nesting and feeding grounds. Many of these waterfowl use farm fields for resting and feeding. Therefore, the agricultural lands in Delta are considered important wildlife habitat.

The Federal and Provincial governments have established wildlife reserves and management areas on or adjacent to relatively large portions of the agricultural lands (i.e., Alaksen National Wildlife Management Area, Boundary Bay Wildlife Management Area, Roberts Bank Wildlife Management Area, South Arm Marshes Wildlife Management Area). Together these areas have been designated as Western Hemisphere Shorebird Reserve Network sites. In addition, the shoreline areas are used extensively for recreation. Metro Vancouver manages the Boundary Bay Regional Park which includes a 23 km dike trail adjacent to farms.

4.1.2 Area Plans

The OCP contains five area plans which build upon the overall OCP and provide more detail and specific directions. The five areas include: East Ladner Area Plan, Riverside Area Plan, Ladner Area Plan, North Delta Area Plan, and Tsawwassen Area Plan.

East Ladner Area Plan

This area plan includes the developed area bounded by Highway 17 to the west, Crescent Slough and the ALR to the north, the ALR and BC Hydro sub-station to the east and the ALR and former railway right of way to the south. Although no agricultural land is located within the plan boundaries, there is agriculture surrounding much of the area. One of the objectives of the plan is to *"provide adequate circulation within East Ladner (including vehicular, pedestrian, public transit and bicycle), and adequate routes for the flow of regional traffic in the vicinity of East Ladner in a manner that would minimize negative effects on the natural environment, the Agricultural Land Reserve, and residential liveability in East Ladner."*

Policy M. Agriculture and Environment states:

"Protect and enhance the urban development in East Ladner by retaining existing trees and separating the urban area from the adjacent agricultural lands by pursuing buffers, such as playfields, bicycle and pedestrian routes, and other similar landscaped recreational areas. Retain as many trees as possible during site development or redevelopment. Require a two-to-one replacement ratio for trees removed as part of the development or redevelopment of commercial, multiple-family residential, or more than two single-family units."

Riverside Area Plan

This area plan includes an area along the western portion of River Road near Ladner Reach, Canoe Pass, West and East Guichon Roads. Portions of the area are within the ALR. Section F of the plan deals with Rural Land Use and includes the following objective and policies:

Objective F: Agricultural Viability

To encourage the viability of agricultural industry within and adjacent to Riverside.

Policy F.1: Support the Agricultural Industry

Support the agricultural industry by upholding policies and regulations concerning use and parcel size for lands within the Agricultural Land Reserve.

Policy F.2: Reduce Agriculture-Urban Development Conflicts

Encourage development to minimize the negative economic and nuisance impacts of urban development on agriculture and encourage the agricultural industry to minimize the negative impacts of intensive agriculture on urban development.

Policy F.3: Enhance Agricultural Drainage

Encourage improvements to field drainage on adjoining agricultural lands.

Policy F.4: Reduce Agricultural-urban Traffic Conflicts

Encourage the elimination or mitigation of conflicts involving non-farm traffic and agricultural equipment.

Ladner Area Plan

This area plan covers the main community of Ladner. It does not include any agricultural land, but the ALR substantially abuts the plan area. This area is bisected by major transportation, recreation and utility corridors. Given the proximity of a major developed area to the ALR, the plan does reference issues that could potentially affect the adjacent farms. Section I is called “Issues Outside the Plan” and contains the following objective and policy that recognizes adjacent farms and the economic viability of agriculture:

Objective I: Relation to Surrounding Areas

To recognize relationships between the plan area and surrounding areas. To work with governments and private landowners to mitigate negative aspects of these relationships and implement constructive solutions.

Policy I.2: Recognize the Economic Value of the Agricultural Land Reserve

Encourage the maintenance of the Agricultural Land Reserve and the viability of the local agricultural industry.

Tsawwassen Area Plan

This area plan is currently undergoing review and will be submitted to Council in September 2010.

North Delta Area Plan

There is no agricultural land within the North Delta Area Plan or adjacent to it and therefore there is no mention of agriculture in the plan. The plan is scheduled to be reviewed over the next year.

4.1.3 Development Permit Areas

Schedule E of the OCP includes areas that are subject to Development Permit Area Guidelines. In the Ladner East Rural area (DPA LV5), there is reference to potential impacts of development on agriculture. Development Permits issued in this area are meant to 1) discourage encroachment into agricultural areas and 2) Urban uses are to be clustered to maintain the area's agricultural integrity.

For the Tsawwassen Golf and Country Club (SD4), a Development Permit Area Guideline is in place to *"foster the creation of a pedestrian friendly, golf course residential community and provide a transition between the agricultural land and the Tsawwassen community and an appealing gateway to Tsawwassen"*.

Normal agricultural uses that are in accordance with the Farm Practices Protection (Right to Farm) Act are exempt from the Streamside Protection and Enhancement (SPEA) DPA.

Delta does not have any Development Permit Area guidelines specifically to buffer urban use (commercial, residential or industrial) from impacting on agricultural lands with the exception of those mentioned above.

4.1.4 Zoning

There are two agricultural zones in Delta: A1 Zone: Agriculture and A3 Zone: Golf Course Agricultural. Agricultural uses are also permitted in rural residential zones and industrial zones as discussed below.

A1 Zone

The A1 Zone is a comprehensive bylaw which sets out permitted uses and accessory uses on land in this zone. It covers all properties within the ALR. The zone sets out requirements for farm houses, additional farm house, accessory farm residential facilities and migrant farm working housing.

- The minimum lot size for subdivision is 8 hectares subject to approval under the *Agricultural Land Commission Act (ALC Act)*. The minimum lot size does not apply to a home site severance as specified in the *ALC Act*. The maximum area of a farm home plate for one farm house is 3,600 square metres.
- The maximum area of a farm home plate containing a farm house and additional farm house is 5,000 square metres. The maximum area of a farm home plate for migrant farm worker housing is 1,400 square metres except for greenhouses, mushroom operations and berry/vegetable operations with on-farm processing or on-farm product preparation, which are allowed up to a maximum of 4,300 square metres based on a ration of 33 square metres per worker.
- The bylaw also establishes setbacks, landscaping, limits on floor area, farm residency and other requirements for farm plate buildings and related uses. In the Edge Planning Area of 150 m from the ALR boundary, certain farm related buildings are not permitted (e.g., swine, fur-bearing animals, kennel, breeding pets, mushroom operations).⁸² Setbacks for farm buildings, agricultural waste storage, detention ponds, barns, composting, wood storage, silo, incinerators, chemical storage are included in the bylaw as are setbacks from a natural or channelized stream for many of the same uses.

Site coverage for non-residential farm uses are outlined in the bylaw (apiculture, nurseries, specialty wood crops, turf farms, livestock, poultry, game, mushroom growing, orchards, vine, field and forage crops).

The bylaw requires that using, storing and managing agricultural solid waste and liquid waste must conform to the Code of Agricultural Practice for Waste Management under the Agricultural Waste Control Regulation pursuant to the *Environmental Management Act*.

- On-farm composting including organic matter and mushroom growing medium must also meet Provincial Government regulations.
- The bylaw also allows for distribution and sale of on-farm composting using agricultural solid waste originating from the farm.
- Where more than 50% of the raw materials or agricultural solid waste used for on farm composting originates from the farm, then up to 100% of the finished compost can be distributed or sold.
- On farms where less than 50% but more than 1% of the raw materials or agricultural solid waste used for composting originates from the farm then 50% of the finished compost product can be sold or distributed off the farm.
- If all the raw materials or agricultural solid waste used for compost originates from off the farm, then no distribution or sales of finished compost are allowed and it must be used on the farm.

⁸² It should be noted that BC MAL's Edge Planning Guidelines are more comprehensive, including conditions for both the farm and the urban side of the ALR boundary, and have not been adopted by Delta. See BCMAL. 2009. Guide to Edge Planning: Promoting Compatibility along the Urban-Agricultural Edges.

http://www.agf.gov.bc.ca/resmgmt/sf/publications/823100-2_Guide_to_Edge_Planning.pdf

The bylaw also provides provision for on farm retail sales. Location of the retail sales area is subject to siting and set back provisions. If any of the products sold do not originate from the farm, then the farm retail area is limited to a maximum of 300 square metres. At least 50% of this area must be for products produced on that farm.

The bylaw has been through extensive revision over recent years to address concerns from the Ministry of Agriculture and Lands. The bylaw does address these concerns.

A3 Zone

The A3 Zone: Golf Course Agricultural deals with the siting of facilities (clubhouse, accessory buildings, parking, etc.) and other uses associated with golf course development. It also allows for farming, breeding pets, and kennels. The bylaw sets out siting and setback requirements for these farm uses. If a golf course is to be constructed it must provide all services - sewer, water, fire protection, drainage, etc. The farm home plate requirements of the A1 Zone are also included in this bylaw. Minimum subdivision size is 8 hectares.

The RS2 and RS3 Zones: Single Family (.40 ha) Residential permit the keeping of some animals, depending on the size of the property as well as nursery operations. However, no retail sales are permitted. The number of animals allowed depends on the size of the parcel.

The Zoning Bylaw also permits the keeping of bees on single family, duplex and public zoned properties. The number of beehives and nucleus colonies (queen bee) varies according to lot size.

Industrial Zones

I1 Zone

The L1 Zone - Light Industrial allows for the "processing, packaging or storage of confectionery, food products and beverages and processing of pre-dressed and Government inspected meats and eviscerated poultry but excluding those involving the distillation, fermentation or rendering of fats or oils, or the slaughtering of fish. " It also includes the storage and sale of agricultural and horticultural products and supplies. If farming occurs on the property then provisions of the A1 Zone apply.

I1-S Zone

The L1-S Zone permits farming, veterinarian services, retail sale of agricultural and horticultural products, primary processing of natural agricultural products and retail sale, service and rental of agricultural machinery and farm equipment.

I2 Zone

The L2 Zone: Heavy Industrial allows for slaughtering of animals, kennels, fish processing, processing of natural agricultural products and farming. Where farming occurs, the provisions of the A1Zone apply. Retail sales are permitted in the area where the industry occurs.

I3 Zone

The L3 Zone Extraction Industrial also allows for farming and kennel uses.

4.2 Other Relevant Bylaws

The Delta Soil Removal and Deposit Regulation, Bylaw No. 5532 regulates both soil removal and deposit within the municipality. A permit is required to remove and deposit certain quantities of soil unless it is part of a normal business practice (e.g., nursery, horticulture operation). It should be noted that soil deposit and removal is also regulated under the ALC Act.

The *Noxious Weed Bylaw, No. 141* requires that "Every owner or occupant or the agent of such owner or occupant of any land in the Municipality of Delta shall cut down and burn or effectively destroy all noxious weeds growing on such land in each year between the First day of April and the First day of November as often as may be necessary to prevent the ripening and scattering of the seed of noxious weeds." This bylaw was written in 1930. It allows for a fine up to \$100 if the bylaw requirements are not met and for municipal authorities to enter properties and to destroy noxious weeds if required.

The *Delta Pesticide Use Control Bylaw No 6788, 2009* applies to all private properties in the municipality and excludes the use of many "cosmetic" pesticides. However, pests that impact upon agriculture are excluded from the bylaw.

4.3 Trails

Several trails traverse near or through farm areas. One which has received much attention over the years is the Metro Vancouver's Boundary Bay Dike trail which extends from the Beach Grove area to the Surrey border. Much discussion has occurred over how to reduce existing and potential conflicts between trail users and farming activities. Farmers have said more education is needed of recreational users. Delta has developed a Dike and Rural Delta Code of Conduct which aims to reduce conflicts between recreational users and farmers.

Dike and Rural Delta Code of Conduct

- *Share the roadway and dike top. Farm equipment is moved from field to field throughout the agricultural area. Delays are expensive*
- *No littering. One small piece of glass can ruin a whole crop.*
- *No trespassing. A farmer's field is a valuable crop.*
- *No illegal parking. Rural roads are working farm roads. Do not block farm gates. Do not block passage for wide farm machinery.*
- *Delta land and foreshore is the home of wildlife with conservation and protected area designation.*
- *Dogs on leash unless otherwise posted.*
- *Obey hunting regulations.*
- *No littering.*
- *No wildlife interference. Keep your distance, do not make excessive noise.*
- *Treat everywhere as a potential archaeological site. Do not damage these sites or remove artifacts.*

4.4 Delta Parks and Recreation Areas

Delta has a parks system comprised of approximately 500 ha (1,350 acres) of land in over 140 locations. The Parks and Recreation Master Plan direct the development of parks and recreation services.

The area for potential conflict between farmers and the general public is along dikes fronting agricultural properties. Delta fully supports additional public access and controlled use of publicly owned natural areas such as dikes, foreshores, ravines and watercourses.

Farmers seem to have adjusted to the increasing recreational use of Delta's rural areas. Most confrontation can be avoided, provided that machinery and equipment access is not prevented by car parking along narrow rural roads and signage is appropriately enforced. Some farmers have indicated that the spacing of bollards at dike access points is too narrow to allow farm traffic and that if farmers have keys, gates may be more suitable.

4.5 Environmentally Sensitive Areas (ESAs)

Delta contains a number of natural areas that have regional and global significance. The Fraser River delta supports the highest densities of wintering waterfowl in Canada. Delta is also home to a wide variety of resident wildlife including birds, mammals, reptiles, amphibians, and fish. Delta provides essential habitat for the Townsend's vole, which uses old field (grassland) habitat. The Townsend's vole is a key food source for local raptors.

The total area represented by ESAs is 3,180 ha, or 18.1% of the land area of Delta. Various wetland, estuary, foreshore and uplands area are designated as environmentally sensitive, and may be parts of nationally and internationally recognized environmental reserves, provincial Wildlife Management Areas (WMAs), municipal or regional parks (Figure 4-4).

Specific ESA Land Use Designations within or adjacent to the farming area include the following:

- ESA general
 - Burns Bog – 2,040 ha, purchased by government in 2004 and now forming an Ecological Conservancy Area
 - Land at the south end of 72nd Street
 - ESA4 – 48 ha, representing properties intended primarily for conservation purposes, immediately south of Boundary Bay Airport
- National Wildlife Area on Westham Island.

Upland habitats represented by soil-based fields, old fields, short grass fields, shrub lands, hedgerows, watercourses, ravines and woodlands are used extensively by wildlife in Delta. Fields around Boundary Bay Airport are part of the Boundary Bay Oldfields Conservation Project and are habitat used by voles and raptors.

The high populations of waterfowl inevitably spill over onto the adjacent farmland, creating challenges for Delta farmers. Similarly, opportunities have been taken to successfully manage farmland for agricultural production and wildlife.⁸³

⁸³ Most notably, through the joint actions of Delta farmers, the Delta Farm and Wildlife Trust and numerous other contributors (see Section 7.2, below).



Figure 4-4: Delta Environmentally Sensitive Areas

(Source: Delta OCP, Map 6. <http://delta.fileprosite.com/Documents/DocumentList.aspx?ID=39381>)

4.6 Transportation Systems and Corridors

About 9% of Delta's farmland is currently used for transportation, communication, commercial service, recreation, institutional, golf course, utility, industrial and park use.

4.6.1 Roads and Rail Lines

Since the early 1960's, Delta has become a significant regional corridor to and along the coast by virtue of establishment of the ferry and cargo terminals on Robert Bank, and with the re-routing of Highway 99 through Delta (Figure 4-5).⁸⁴ The coal terminal on Roberts Bank required a feeder rail line and the container terminal is dependent on a substantial trucking fleet to service it on a daily basis.

In addition, improved access to Vancouver with construction of the Massey Tunnel created significant growth in demand for residential properties in Ladner and Tsawwassen. There have been several consequences:

- The evolution of a regional road transit system that bisects the municipality
- Transit traffic increasing more rapidly than the capability of the road systems to handle it, with the effect of creating traffic congestion and extensive use of back roads by commuters.
- Incremental modifications to existing roadways, leading to difficult farm equipment access, farmland fragmentation and parcel isolation
- Safety concerns.

Currently, significant changes to the transportation system are being made through the construction of the South Fraser Perimeter Road (SFPR). The SFPR is part of a Gateway Program⁸⁵ of various projects intended to move people and goods more safely and efficiently through the region. Nevertheless, the SFPR will take 90 ha of farmland out of production, fragment farms in its path and increase the difficulty of farmers to access their fields. Benefits to agriculture in the form of improved drainage and irrigation have been added into the project to mitigate its impact.

⁸⁴ This figure does not show the route that the new South Fraser Perimeter Road will take; instead refer to Figure 5-4.

⁸⁵ <http://www.gatewayprogram.bc.ca/>



Figure 4-5: Transportation Routes in Delta, 2009

The future demand for larger transportation corridors, with concomitant impacts for local agricultural traffic, will be correlated with several factors:

- Growth and intensity of use of the container terminal on Roberts Bank
- Growth and intensity of use of the ferry terminal on Roberts Bank
- Development of industrial lands of the Tsawwassen First Nation
- Coal exports and need for increased railway capacity
- Population growth of Tsawwassen and Point Roberts (US)
- Increased ferry traffic, including freight to Vancouver Island
- Improved rural and agricultural traffic planning.

Projections of ship, rail, train, truck and car movements have been made to account for changes with the construction of the Deltaport third berth (Table 4-2).

Table 4-2: Existing and Projected Use of Transportation Corridors and Terminals in Delta

Mode	Use 2003/2004	Use 2006	Projected Use 2011/12	Projected Use 2021
Ship (1)	365 vessels per year 4051 TEUs*	312 vessels per year 4133 TEUs		360-393 vessels per year
Train (1)	12 trains per day to Westshore Coal Terminal 6 trains per day to Deltaport		12 trains per day to Westshore Coal Terminal 9 trains per day to Deltaport	
Trucks to Deltaport (1) (2)	900 round trips per day	2,000 semi trucks per day	1,200 round trips per day	5,000 semi trucks per day
Cars		2,100 movements per day	2,600 movements per day	
Ferry (2)(3)		2.7 million vehicles per year, including 350 trucks per day	2.7 million vehicles per year 12 container drop-trailers per day	2.7 million vehicles per year, including 400 trucks per day 75 – 80 drop trailers per day
Massey Tunnel (4)			15,600 trucks per day	15,000 trucks per day

Notes: * - twenty foot equivalent units

Sources: (1) The Deltaport Third Berth Project Community Liaison Committee (DCLC). <http://www.delta3berthinfo.org/purpose-and-mandate>

(2) The Issues of South Delta. <http://www.thereisanotherway.com/4.html>

(3) Kerr, J. 2009. Cargo service permanent on ferry routes. Delta Optimist.

<http://www.burnabynow.com/news/Cargo+service+permanent+ferry+routes/2826360/story.html?id=2826360>

(4) Lewis, B. 2010. No relief for commuters under Fraser mouth. The Province. Aug 24.

<http://www2.canada.com/theprovince/news/story.html?id=4e36d95f-74d1-40ff-b640-a06937541be8>

4.6.2 Utility Corridors

Sewer, water and hydroelectric lines are generally aligned with the transportation corridors through Delta. These are likely to require upgrading or expansion in the future, as was the case most recently for the Vancouver Island Transmission Reinforcement project, which transports electricity from Arnott Station to Vancouver Island. Incremental long term impacts on agriculture are not considered significant.

4.7 Local Food Initiatives

4.7.1 Earthwise Society in Boundary Bay

The Earthwise Society is a not-for-profit organization whose mission is to act as "a catalyst for the creation of a sustainable community through empowering individuals to take responsibility for social, economic and environmental well-being."⁸⁶

Earthwise Society consists of 2 acres of organic farmland in Boundary Bay, Tsawwassen, one of which is used to grow local food made available at a Farm Store twice a week in season and at the Ladner Farmer's Market. On the other acre, there are 67 garden plots worked by gardeners in the community.

The Society also runs various programs to teach and educate about sustainable practices. These initiatives include workshops, Organic Master Gardener courses, events, ecotours, display gardens, and development of educational materials, planned in partnership with the Delta School District

4.8 Conversion of Farmland

Delta has been subject to a long period of rapid growth with many interests positioning themselves well to meet development opportunities. Strong competing demands for farmland have come from industrial, institutional, residential, transportation, and recreational quarters as the municipality is extremely well situated regionally. With completion of negotiations with the Tsawwassen First Nation, provincial Crown land in the ALR was removed from the ALR and transferred over to the First Nation. This results in the reduction in farmland since the First Nation intends to develop industrial capacity. The farmlands are no longer within Delta.

Expansion of road and rail corridors through Delta may be expected to result in the incremental loss of farmland. The South Fraser Perimeter Road will take some 90 ha when complete and parcel fragments that have been created may not be accessible or suitable for farming.

4.9 Tsawwassen First Nation (TFN) Land

The TFN has prepared a land use plan describing how they envision their growth and development to proceed.

The TFN Final Agreement (Treaty) gives the TFN self government powers including management responsibility over lands and resources owned by the TFN. Under the Treaty the TFN control 724 hectares. The TFN has powers similar to a municipality to undertake planning, to designate land uses and to regulate land uses and other activities. The Treaty allowed for 207 hectares of Provincial Crown Land to be removed from the ALR.

In 2009 the TFN adopted a historic first land use plan which is very similar to an Official Community Plan for a municipality. It sets out a Vision and Guiding Principles and includes policies for the management of TFN lands and for the community. The Treaty included 157 hectares of agricultural land which is to remain within the Agricultural Land Reserve (ALR). The Land Use Plan states that if in the future, the TFN decides to remove land from the ALR it must apply to the ALC through the process set out in the Agricultural Land Commission Act.

⁸⁶ <http://www.earthwisesociety.bc.ca/>

The Treaty makes provision for the TFN to have a right for 80 years from the start of the Treaty to purchase approximately 278 hectares of lands north of Tsawwassen Lands (Brunswick Point lands) should the people currently leasing these lands decide not to buy them or decide to sell them later. If TFN purchases land within the Brunswick Point lands within 50 years after the effective date of the Treaty, TFN can include these lands as treaty settlement lands. Following this 50-year period, TFN can add lands to treaty settlement lands if it purchases the land from willing sellers, however the addition must be ratified by federal, provincial and municipal governments. The TFN Land Use Plan has identified the Brunswick Point lands as a potential growth area to serve the needs of their community.

Of relevance to agriculture is the land use designation for Agriculture and Managed Forest found in the land use plan. Section 4.6 of the Land Use Plan outlines the Objectives and Policies for this designation.

The intent of this designation is to preserve the lands identified as Agricultural Land Reserve (ALR) for crop growing/ harvesting related activities. The agriculture lands will be used for food production, forestry, education and may include passive recreation. Managed Forest lands are also included in this designation. The agricultural lands occupy 157 hectares (388 acres).⁸⁷

Objectives

- To ensure agricultural lands are retained for farming and farming related uses consistent with the provisions of the Agricultural Land Reserve (ALR)
- To create a managed forest to provide for timber harvesting, passive recreation, and nature preservation
- To create, as appropriate, a managed wetland to encourage birds and a more natural ecosystem.
- To cultivate plants for traditional medicinal use.

Policies

- TFN supports the long-term retention for agricultural of areas designated as Agriculture (ALR) on Schedule 1
- TFN supports a range of farming related land uses within the agricultural designated lands to include equestrian centres as well as some passive recreation and nature interpretation
- TFN will work with the Agricultural Land Commission to undertake the ALR land swap, identified on the Land Use Plan. This swap is intended to optimize opportunities for both agriculture and for lands not assigned to agriculture, as identified in Schedule 1 to ensure there is no net loss of ALR designated lands
- TFN will consider the preparation of an agricultural master plan for the agriculture/managed forest area to ensure that the optimum economic use of agricultural land is achieved
- TFN will investigate as part of the preparation of an agricultural master plan the opportunity to create a managed forest to provide an option for community gardens, equestrian trails, forestry, and multi-use trails

⁸⁷ AECOM. 2009. Tsawwassen First Nation: Land Use Plan.

http://www.bctreaty.net/nations/pdf_documents/Tsawwassen/TFN_Land_Use_Plan.pdf

- TFN will examine the feasibility of creating some wetlands including an observation node and open areas of naturalized space as part of the managed forest area. The wetlands are intended to be connected to the projected blueways network.

4.10 Taxation

4.11.1 Property Taxation

The two components of determining how much private property owners must pay for title to land are a) property assessment and b) tax rate. These valuations are applied to three types of property: 1) land; 2) improvements to land; (e.g., buildings) and 3) personal property (movable man-made objects). Municipalities raise a large proportion of their operating funds from taxation of property.⁸⁸

BC Assessment Authority

The province-wide property assessment system is operated by BC Assessment Authority (BCAA). The BCAA determines farmland values throughout the province using a rate schedule based on the utility and use of the land for farming. Farmland is not assessed at market value, but at its value in farm use only and not based on valuations based on farmer-to-farmer sales.

In BC, farmland values based on value in farm use do not exceed \$7,500 to \$10,000 per ha. As such, land assessed at non-farmland values in the Lower Mainland may be typically valued in a range from 25 to 125 times farmland value, depending on size, location, and local real estate demand. In order for farm assessment status to be obtained, farmers must meet land use requirements and minimum income thresholds.

Farm Class Activities

Class 9 represents farmland. Farmers must obtain farmland tax status and the land used in prescribed ways in order to be considered for farm class status:

- a) primary agricultural production⁸⁹
- b) purposes that contribute to primary agricultural production (e.g., irrigation)
- c) a farmer's dwelling
- d) the training and boarding of horses when operated in conjunction with horse rearing.

Farm Gate Income from Primary Production

Eligible income is the gross annual value at farm gate prices (actual or calculated) of primary agricultural products produced on the farm and excludes production of manufactured derivatives from agricultural raw materials (hay is an exception), primary agricultural production for domestic consumption on the farm, the production of agricultural by-products, agricultural services, and the breeding and raising of pets, except horses.

Income thresholds must be met in order for land to be classified as a farm for property assessment and tax purposes. These minimum income thresholds vary by size of property and

⁸⁸ Property taxes account for 40% of municipal revenues in BC.

⁸⁹ Schedule A of the regulations defines primary agricultural production by farm-based activity. There are allowances for developing farms. The requirements for obtaining farm status on land within the ALR are more flexible than for obtaining farm status for lands outside the ALR. See BCAA. Farm Classification in BC.

<http://www.bcasessment.bc.ca/public/Documents/10-055%20BCA%20Farm%20Classification%20Brochure.pdf>

have recently been the subject of a Farm Property Assessment and Classification Review.⁹⁰ Recent and or impending changes use formulae that provide the following criteria:⁹¹

- \$10,000 on land less than 8,000 m² (2 ac)
- \$2,500 on land between 8,000 m² (2 ac) and 4 ha (10 ac)
- on land larger than 4 ha (10 ac), you must earn \$2,500 plus five per cent of the actual value of any farm land in excess of 4 ha
- \$10,000, in order to qualify unused land where the area in production makes up at least 25% of the land.

Leased land that is part of a farming operation that meets the requirements for farm assessment is eligible for farm tax status.

Improvements

All improvements on farmland, including the farmer's dwelling, are classified as residential (Class 1) and valued at fair market value. The land under structures used in primary production on farms meeting the minimum income threshold is classified as farmland.⁹² Land under structures used as packing houses may be assessed as farmland provided that more than 50% of the farm products packed in the facility are grown or raised on the farm where it is located, Otherwise, the land will be assessed as residential and structures will be classed as "Business and Other".⁹³

Some other jurisdictions provide a farm classification for farm improvements, allowing farm tax rates for built assets used in farming. "Farmstead" exclusion has been used as way to reduce taxes on farm structures engaged in farming. For example, all buildings and structures that are used primarily for agricultural purposes (such as housing animals or storing supplies, production, or machinery) may be exempted from, or offered lower, property taxation as long as the improvements are used in agricultural production.⁹⁴ The measure has increased relevance as a relief mechanism in areas where farming has become intensive and farm structures comprise a high proportion of the investment in the farming operation.

Split Classification

One of the recent changes to the farm tax assessment rules has been to eliminate the split classification assessment provision on farms concerning residences of landowners. This provision now allows farmland owners to pay substantially less tax on the land under residences on farms, provided they meet the 50% or 25% rule respecting agricultural production.⁹⁵

⁹⁰ See Farm Assessment Review Panel. 2009.

http://www.farmassessmentreview.ca/FARP_Report_July_31_2009.pdf

⁹¹ See <http://www.bcassessment.ca/public/Fact%20Sheets/Classifying%20Farm%20Land.aspx>

⁹² BC Ministry of Agriculture and Lands. 2008. Farmland Classification in the Fraser Valley. Abbotsford.

⁹³ See <http://www.bcassessment.ca/public/Documents/10-055%20BCA%20Farm%20Classification%20Brochure.pdf>

⁹⁴ For example , the Pennsylvania Homestead/Farmstead Exclusion (Act 50).

<http://www.alleghenycounty.us/opa/what.aspx>

⁹⁵ See Farm Assessment Review. Changes to the Rules for Determining Farm Classification for Assessment Purposes. http://www.farmassessmentreview.ca/pdfs/changes_to_rules.pdf

Corporation of Delta

Using the property assessments conducted by BCAA, municipalities have the authority to set mill rates⁹⁶ for the various classes of property in their jurisdiction. Farm class mill rates may vary significantly between municipalities for various reasons including:

- the tax revenue importance of the classification
- in reflection of the level of services required by the sector
- a desired redistribution of government taxes from one property classification to another.

Delta's mill rates applying to farmland are higher than some municipalities in the Lower Mainland. Some of the lowest rates are found in the adjacent municipality of Surrey.⁹⁷

There are good reasons why the mill rates may vary between local jurisdictions, particularly if the levels of services vary. In some cases, provincial and municipal governments have established special utilities to generate levies to pay for local improvements, such as for diking and drainage, and where utilities are not used, the mill rate may reflect these budgetary requirements. Nevertheless, discrepancies at the intra-regional level can heighten concerns about perceived inequities in the treatment of farming locally.

4.11.2 School and Hospital Taxes

Farmland has a 50% value exemption, meaning that the taxable value for calculating school and hospital taxes is half of the total assessed value. In 2011 and subsequent years, an owner of Class 9 farmland is entitled to a credit that will further reduce the provincial school tax payable on these properties by 50%.

4.11.3 Consumer Taxes

Agriculture receives tax exemptions or advantaged under the Social Services Tax Act and the Motor Vehicles Fuel Tax Act. Bona fide farmers, i.e., those with Farmer Identity Cards,⁹⁸ may purchase various materials and equipment for farm purposes without having to pay provincial sales tax.

Similarly, bona fide farmers are eligible to purchase coloured fuels (e.g., gasoline and diesel) for vehicles, tractors and unlicensed motor vehicles operated on a farm for farm purposes.⁹⁹ These fuels are taxed at a lower rate.

Farmers with Farmer Identity Cards are also eligible for farm license plates on commercial vehicles used in connection with the farm operation. Farm plates have reduced fees but are subject to restrictions.¹⁰⁰

The recently imposed BC carbon tax has placed BC farmers at an instant incremental competitive disadvantage to virtually all jurisdictions in North America. The tax has a significantly dramatic effect in Delta, in particular, because of the large scale of farm operations and the reliance on petroleum in field

⁹⁶ Mill rates are expressed as tax per dollar of assessed value of property, where one mill is one-tenth of a cent.

⁹⁷ See BC Ministry of Community, Sport & Cultural Development. Local Government Tax Rates and Assessments. http://www.cscd.gov.bc.ca/lgd/infra/tax_rates/tax_rates2010.htm

⁹⁸ These cards are issued by the BC Agricultural Council. http://www.bcac.bc.ca/index.php?page_id=8

⁹⁹ Ministry of Provincial Revenue. http://www.sbr.gov.bc.ca/documents_library/notices/Notice-FarmersColouredFuelSellers.pdf

¹⁰⁰ See DriveSmart BC. Do Farm Tractors Need License Plates? <http://www.drivesmartbc.ca/insurance/do-farm-tractors-need-licence-plates>

horticulture and on natural gas in the greenhouse sector. The carbon tax introduced provincially in Jan, 2010 increases the cost of fossil fuels¹⁰¹ in BC by \$0.0445 per litre (rising to \$0.0667 by July, 2012).

¹⁰¹ Fossils fuels represents all non-renewable fuels, and includes gasoline, light fuel oil (diesel), natural gas, and coal. See BC Ministry of Finance, 2010. Tax Schedule.
[http://www.sbr.gov.bc.ca/documents_library/shared_documents/Carbon Tax Rates by Fuel Type from Jan 2010.pdf](http://www.sbr.gov.bc.ca/documents_library/shared_documents/Carbon_Tax_Rates_by_Fuel_Type_from_Jan_2010.pdf)

5.0 Agriculture Resources of Delta

Delta contains some of the most valuable agricultural resources in BC and Canada, ranging from highly productive soils and water availability to an extremely favourable climate for crop production.

5.1 Climate

Prevailing westerlies and the warm waters of the Pacific and the Strait of Georgia create the main climatic characteristics of Delta, which are the mild winters, warm summers and a narrow range of temperatures.

Nevertheless, there is generally an over-abundance of rainfall in the winter followed by a deficiency of precipitation in the summer. As such, drainage and irrigation are critical management requirements to ensure that soil moisture conditions can be maintained in a condition conducive to crop growth and production.

5.1.1 Climatic Capability for Agriculture in Delta¹⁰²

The determination of the climate capability for agriculture is based on:

- **Freeze Free Period** - FFP (the greatest number of consecutive days in a calendar year free of a temperature of 0 degrees C or less). While Delta has the shortest freeze free period in the Lower Mainland, the FFP still exceeds 160 days. Average January minimum temperatures are just slightly below freezing.
- **Effective Growing Degree days** – EGDD (the accumulated product of the daily GDD and a measure called the Crop Development Index that adjusts for the effects of sub-optimal temperature conditions). The EGDD in Delta is slightly less than 900.
- **Climatic Moisture Deficit (CMD) and Climatic Moisture Surplus (CMS)** - (the difference between the seasonal (May – September) precipitation and the seasonal potential evapotranspiration). Less than 25% of the annual precipitation falls from May to September. The seasonal precipitation is slightly more than 210 mm with seasonal potential evapotranspiration of 380 mm and a climatic moisture deficit of about 170 mm.
- **Sunshine and Radiation** - Two thirds of the annual hours of sunshine occur between May and September. Delta receives over 1,900 hours of bright sunshine annually with average global radiation of 4,454 MJ/m².

The overall climatic capability for agriculture is one of the best in BC. While aridity is a factor on some unimproved soil classes, with irrigation Delta is well suited to grow vegetables, field and cereal crops, small fruits, pasture and a range of other types of crops.

5.1.2 Potential Effects of Climate Change

The vast majority of climate scientists consider that climate change is a real phenomenon occurring due to many factors, including the impacts of greenhouse gas emissions and human activity on the environment. Probably, the single most conclusive factor indicating changes in the global climate is the steady rise in sea level documented in records dating back to the 1870's.¹⁰³

¹⁰² Bertrand et al. (1991) Soil Management Handbook for the Lower Fraser Valley. BC Ministry of Agriculture, Fisheries and Food. http://www.agf.gov.bc.ca/resmgmt/publist/600Series/610000-1_Soil_Mgmt_Handbook_FraserValley.pdf

¹⁰³ CSIRO Marine and Atmospheric Research. Sea Level Rise: Understanding the past – improving projections for the future. <http://www.cmar.csiro.au/sealevel/index.html>

An appropriate strategic response to climate change is critical for agriculture in Delta. There are significant opportunities for agriculture to assist in the mitigation of effects through changes in practices and adoption of technologies. The threat is that changes to climate may trigger more volatility in growing conditions and create constraints on agricultural resources availability in the future.¹⁰⁴

Table 5-1 suggests that the impacts of climate change are expected to include warmer and wetter winters in the Lower Fraser Valley, while summers are anticipated to become warmer and drier. The general agricultural opportunity will be increased frost free days and lengthened growing season for a more temperate range of crops. The agricultural challenges may include a greater variety of pests, need for heat tolerant crop species and increased demand for irrigation water in the face of potentially decreased availability.¹⁰⁵

5.2 Soil Capability for Agriculture

The following section reviews existing data¹⁰⁶ on soils in Delta and provides a summary of the soils and agricultural capability based on existing data for various geographic areas in the study area. Delta supports significant berry, vegetable, greenhouse, dairy, poultry and horse operations.

The ability of any area to produce agricultural crops is based on limitations of the soil and climate. In many cases soils can be improved by management inputs such as drainage, irrigation, and fertilization; however climate will ultimately limit crop the range of suitable crops for a geographic region. "Given sufficient and appropriate level of management inputs, virtually all climatically suited crops can be produced on all soils within a climatic region with only minor differences in yield."¹⁰⁷ However on soil that is well suited for a particular crop, management inputs will be less than for unsuited soils. This is an important factor in farmers making decisions on crops that will be financially viable on their land.

Delta has some of the most productive farmland in Canada. Soils in the lowlands of Delta are comprised of fertile silt clays or silt. They have good water storage capacity and the potential to sustain crop production year-round.

5.2.1 Soil Capability Rating System

Land capability for agriculture ratings are determined by climatic capability for agriculture in combination with soil characteristics. The classes and subclasses, which indicate the major limitations of the land for agriculture, and the symbols used to express these, are defined below. The capability of

¹⁰⁴ See Slow Food Vancouver. 2009. Securing the Food Future of the Lower Mainland.

<http://www.slowfoodvancouver.com/index.php/Features/>

¹⁰⁵ For more detail see Zebarth, B., Caprio, J., Broersma, K., Mills, P. and Smith, S. (1997): Effect of climate change on agriculture in the British Columbia and Yukon; in Responding to Global Climate Change in British Columbia and Yukon, Volume 1, Canada Country Study: Climate Impacts and Adaptation, (ed.) E. Taylor and B. Taylor; Environment Canada and BC Ministry of Environment, Lands and Parks and Natural Resources Canada. Climate Change Impacts and Adaptation. Chapter 8. http://adaptation.nrcan.gc.ca/assess/2007/ch8/3_e.php

¹⁰⁶ The information provided in this section has been derived from the following publications: Soil Management Handbook for the Lower Fraser Valley; Soils of the Langley Vancouver Map Area Volume 1; Soils of the Langley Vancouver Map Area Volume 3; Agricultural Land Capability Maps of the area.

¹⁰⁷ Bertrand et.al. (1991) Soil Management Handbook for the Lower Fraser Valley. BC Ministry of Agriculture, Fisheries and Food

some of the soils in the study region becomes greater through improvements such as installation of irrigation and/or drainage.

Classes 1, 2 and 3 represent the highest capability agricultural land in Canada.¹⁰⁸ As the Class number increases, the characteristics requiring management become more limiting.

In addition to the major capability classes, there are capability subclasses.¹⁰⁹ These subclasses indicate lands with similar kinds but varying intensities of limitations or hazards. Each subclass may include different kinds of soil, similar with respect to degree of limitation; but soils in any class may require unlike management and treatment as indicated by the subclasses. For example, Class 3 soil that has an M subclass that would indicate it had a moisture limitation. This soil may have an improved rating if the moisture limitation is removed.

5.2.2 Soils and Land Capability in Delta

The soils in the agricultural areas of Delta are primarily lowland soils formed from deltaic deposits from the Fraser River and are classified as Gleysols with some organic (peat, muck) soils in and around the Burns Bog area. Unimproved land capability ratings are mostly Classes 3 and 4 with excess water being the main limitation. Almost all soils in the Delta lowland areas have high water holding capacity, slow surface runoff with ponding common in the winter months. Improved classes (with adequate water table control) are mainly Classes 2 and 3 with some improvable to Class 1. These soils when drained properly are highly productive for almost all crops that are climatically suited for the area. In areas close to the ocean such as the soils near Boundary Bay and small areas of Westham Island, there are also saline influences and salt water seepage that present limitations to agriculture.

¹⁰⁸ Canada Land Inventory (CLI) Soil Capability for Agriculture Classes:

Class 1- no or only very slight limitations that restrict use for the production of common agricultural crops.

Class 2- minor limitations that require good ongoing management practices and/or slightly restrict the range of crops.

Class 3- limitations that require moderately intensive management practices and/or moderately restrict the range of crops.

Class 4- limitations that require special management practices and/or severely restrict the range of crops.

Class 5- limitations that restrict its capability to producing perennial forage crops and/or other specially adapted crops.

Class 6- non-arable but is capable of producing native and/or uncultivated perennial forage crops.

Class 7- no capability for arable culture or sustained natural grazing.

In Kenk, E. and I. Cotic, 1983. Land Capability Classification in British Columbia. BC Ministry of Agriculture and Food/BC Ministry of Environment. MOE Manual 1, Victoria, BC.

¹⁰⁹ Capability subclasses include:

C	= adverse climate
F	= low fertility
I	= inundation by streams or lakes
M	= moisture limitation
P	= stoniness
R	= consolidated bedrock
T	= topography
W	= excess water
X	= cumulative minor adverse characteristics

Table 5-1: Potential Impacts of Climate Change on the Lower Fraser Valley

Variable	Current Situation	Climate Change CGCM1 Model (1)	Climate BC (2)	Potential Agricultural Impacts in the Lower Fraser Valley
Temperature	Continental temperatures with summers in LFV being slightly warmer and winters cooler than Vancouver Maximum and minimum Vancouver temperatures are 33.3 °C and -17.8 °C	Temperature rise in all months January temperature rise higher	Average temperature rise in all months High temperatures becoming more variable Low temperatures becoming less variable Frost free period extended by 24 to 32 days by 2050	Drier summer conditions increasing risk of forest fire Air quality decline due to stagnant summer conditions Possible to introduce new more temperate higher value crops More insects, fleas and mites surviving the winter, greater variety of pests Higher crop productivity Decreased greenhouse and livestock heating costs Increased summer greenhouse and livestock cooling costs Increased potential for sun scald Increased demand for heat tolerant forage species Increased risk for summer drought Earlier harvest for forage crops Increased potential for over wintering crops, double cropping
Precipitation	Average annual precipitation in LFV is higher than Vancouver (1167 mm) Highest daily Vancouver rainfall and snowfall - 89 millimetres and 41.0 centimetres Majority received in late fall and winter, in the form of rain along the coast and snow at higher elevations	Increase in precipitation 20 year return values rising 10 mm 10% to 20% increase in Jan, Feb, and Mar 10% to 30% decrease in Apr, May, and Jun Little change in Jul and Aug 10% to 30% increase in Sep, Oct, Nov, and Dec	Spring precipitation decreasing (counter trend) Little change in summer precipitation (counter trend)	Deterioration of water quality Increased risk of flood events in winter and early spring Winter landslides Increased load on LFV sewerage and drainage systems Decreased summer and fall stream flows Higher summer demand for agricultural water Impact on manure application windows Higher water tables Later spring planting Earlier fall harvests Changes to forage quality Increased potential for agricultural inputs to leach into watercourses and groundwater
Snow pack	Less snow pack resulting in lower summer river flows	n/a	n/a	Not indicated
Sea Levels				Rising by 2 to 9 mm per year Rising groundwater levels with salt intrusion
LFV = Lower Fraser Valley Sources: (1) Taylor, E. and D. Langlois. 2000. Climate Change and the Lower Fraser Valley. Environment Canada. http://www.pyr.ec.gc.ca/georgiabasin/reports/Climate_Change_LFV/LFVCC_e.pdf (2) Whiting, D. and c. Lai. 2008 Climate Variable Mapping and Agriculture – Metro Vancouver http://www.metrovancouver.org/planning/development/agriculture/AgricultureDocs/Climate_Variable_Mapping_report_final.pdf				

There is also a significant area of organic soils (peat and muck soils) that occur around the perimeter of Burns Bog and within the bog. The soils around the perimeter of the bog generally are unimproved Classes 4 or 5 with excess water, low nutrients, and degree of peat decomposition. Most of these soils can be improved to Classes 2 or 3 with excess water remaining a limiting factor. Muck and peat soils present difficulties in agricultural management as they are very prone subsiding and biological oxidation once they have been drained. They are also very acidic and naturally unfertile. If these soils are used for agriculture they need special management considerations to reduce oxidation, including reduced tillage, cover cropping, and good water table control.

The soils are further described, below, by geographical distribution within Delta. Land capability mapping is presented in the Appendix.

Westham Island

The majority of the soils on Westham Island are unimproved Classes 3 and 4 with the major limitation being excess water. The soils are Westham and Crescent soil series which are in the Delta Soil Management Group. These soils are very poorly drained and have a high water holding capacity and relatively high organic matter content in the cultivated surface layer. With drainage most of these soils improve to Classes 1 and 2 and they are well suited for a wide range of agricultural crops. Suitable crops on these soils include annual legumes, blueberries, cereals, cole crops, corn, perennial forage crops, root vegetables, shallow rooted annual vegetables and strawberries. In some areas there are some limitations due to soluble salts that limit agricultural capability.

The soils on Westham Island are amongst the best agricultural soils in BC, as long as water tables can be controlled. The soils in this area however are not suitable for urban or industrial uses as the soils have low bearing strengths and due to the high water table, basements are impractical and septic tanks function poorly.

Westham Soils (WS)

These soils have developed over medium to moderately fine textured deltaic deposits of the Fraser River. Soil texture of this series is mostly silt loam with some silty clay loam. Limitation can be saline subsoil conditions which often occur between 50 and 100 cm below the surface. Westham soils are also very poorly drained with high water holding capacity and slow surface runoff. Drainage is essential for agricultural production on these soils.

Crescent Soils (CT)

These soils are nearly level are developed over medium to moderately fine textured deltaic deposits of the Fraser River. Soil textures are mostly silt loam with some variability to silty clay loams. Crescent soils are moderately to poorly drained with slow surface runoff and high water holding capacity. Much like the Westham soil series these soils need drainage for agricultural production.

Ladner from Fraser River to Cohilukthan Slough

The majority of the soils in this area are unimproved Class 4 with some Class 3 with the major limitation being excess water. The majority of these soils can be improved with drainage to Classes 2 and 3 with small areas of Class 1.

The main soil series in this area are Crescent, Delta and Ladner series. All of these are in the Delta Soil Management Group as such are suitable for annual legumes, blueberries, cereals, cole crops, corn,

perennial forage crops, root vegetables, shallow rooted annual vegetables and strawberries. Like the soils of Westham Island they are not suitable for urban development due to low load bearing capacities.

Ladner Soils (L)

Ladner soils developed from moderately fine to fine textured mixed marine and freshwater deltaic deposits, which are underlain by sandy deposits at depth below 1 metre. Surface textures are mainly silty clay loam with some silt loams. These soils are moderately poorly to poorly drained and have high water holding capacity and slow surface runoff. Like most soils in Delta drainage is required for agricultural production.

Delta Soils (DT)

These soils are common throughout central and western regions of the Corp. of Delta, including significant areas of pure map units. Delta soils formed from medium to moderately fine textured Fraser River deltaic deposits that are usually 1 metre or greater in depth. Surfaces are silty loam with some silty clay loam. Drainage is required for agricultural production.

Ladner from Cohilukthan Slough to Boundary Bay (not including Burns Bog Area)

The area south and east of the Cohilukthan Slough has slightly different soil series compared to the areas north of the slough, although the agricultural capability rating are very similar. This area is primarily composed of Delta and Spetifore soils with some Guichon soil series. In this area the majority of soils are classed as unimproved Classes 3 and 4 with some Class 5. Improved class is mainly Classes 2 and 3. Limitations are mostly excess water and as you move closer to Boundary and Mud Bay there are limitations due to salinity.

Delta soils have been described in the preceding section, however the characteristics of the Spetifore and Guichon soil series are somewhat different, primarily due to saline influence and high organic matter in the surface soil. Spetifore and Guichon soils make up about 1,500 ha in the central and southern parts of Delta. In these two soil series the subsoil and sometimes the surface soil is moderately to strongly saline. Salinity is present due to tidal water entering the root zone through subsurface sand layers. Surface salinity is variable, but often limits crop growth during the growing season. With effective drainage and irrigation, salinity in these soils can be lowered to increase productivity.

Spetifore Soils (SF)

These soils are found only in the southern and central parts of Delta. These soils have developed from medium textured deltaic deposits that are deeper than 1m and usually overlies medium or fine sand. Spetifore soils are poorly to very poorly drained, moderately pervious, and have a high water holding capacity of slow surface runoff. Due to the high water table, rooting of crops is usually limited to 50 to 60 cm. These soils are also limited by saline conditions.

Guichon Soils (GU)

These soils are only found in South Delta, west of the Boundary Bay Airport. Guichon Soils have developed from medium to moderately fine textured deltaic deposits that are 30 to 80 cm thick. These deposits overlay moderately coarse textured sediments. The surface textures are usually silty clay loam or silt loam. Subsurface soils are strongly saline and usually high in sulphur. They have slow surface runoff, and moderate water holding capacity, they also subject to salt water seepage near boundary bay. Guichon soils have agricultural limitations due to excess water and saline conditions.

Burns Bog Area

A significant portion of Burns Bog (2,042 hectares) is protected and will not be used for agriculture, due to its status as an Ecological Conservancy Area. However the areas around the perimeter of the bog are within the Agricultural Land Reserve and are either being farmed or have the potential for agricultural production.

The two main soil series in the land surrounding the bog are Lumbum and Annacis. Both these soils series are in the Lumbum soil management group. The soils in this group consist of partially to well-decomposed organic material ranging from 0.4 to 2 metres in depth. They are poorly drained, have high water and nutrient holding capacity are relatively infertile and acidic. Most of these soils are being farmed and have been improved by water table control, management of acidity by the addition of lime and fertility management by the use of fertilizer additions.

Annacis (AS)

Annacis soils occur around the south perimeter of Burns bog and have developed from deep organic accumulations which overlie silty deltaic deposits. Typically these soils have about 40 cm of partially decomposed organic material underlain by at least 120 cm of well decomposed organic material. These soils are very poorly drained, moderately to rapidly pervious and have a very high water holding capacity. If groundwater levels can be controlled these soils have good agricultural potential and can be improved to class 2 land.

Lumbum (LM)

Lumbum soils have developed over deeper, partially decomposed, organic deposits at least 160 cm thick. In cultivated areas the surface is well decomposed organic material that overlies partially decomposed material. The subsurface material is either clayey deltaic, silty floodplain or clayey glaciomarine deposits. These soils are very poorly drained, moderately pervious and have a high water holding capacity and slow surface runoff. Much like the Annacis soils, these soils are highly productive if water table is managed and soils acidity and fertility are properly managed.

Table 5-2 shows the various soils in relation to their soil management groups. All soils in Delta benefit from underdrainage. Irrigation, in addition to dealing with drought summer conditions, is required in saline areas to flush salts out of the soil. Clayey soils require subsoiling and organic matter incorporation to improve aeration.

Figures 5-1 and 5-2 show the location of farmland in Delta where salinity restricts agricultural productivity.

Table 5-2: Predominant Soil Management Groups in Delta

Soil Management Group	Description	Improvements Required	Hectares (a)	Percent of Delta ALR	
Delta	• Soils are very poorly drained, high water holding capacity and nutrient holding capacity • Saline issues in depressional areas	• Underdrainage • Irrigation to flush salts from depressional areas • Subsoiling	4,500 -5,000	45 - 50%	
Ladner	• Poorly drained • High clay content • Dense subsoil limits rooting	• Underdrainage with close spacing • Organic matter incorporation	1,600	16%	
Benson, Guichon & Spetifore	• Poor to very poor drainage • High salinity often limiting crop growth	• Complete water management to lower water table • Irrigation to flush salts and control salinity • Subsoiling	1,500	13%	
Crescent	• Drainage is naturally poor • Some soils have low organic matter	• Underdrainage • Subsoiling	1,000	10%	
Blundell	• Poorly to very poorly drained • Variable depth to mineral soil makes drainage difficult	• Underdrainage with close spacing • Subsoiling	500	5%	
Other (mostly organic)	• Poor drainage • High acidity	• Underdrainage with close spacing • pH adjustment	400-900	4 -9%	
Notes: (a) Approximate area of ALR in Delta			Sub-total	10,000	100%

5.3 Agricultural Land Base

Delta has a total land and water area of 39,587 ha, of which 18,109 ha is comprised of land. In 2010, the total area of the Agricultural Land Reserve (ALR) in Delta is about 9,403 ha, comprising about 52% of the land area of the municipality.

Based on the 2010 BCMAL Land Use Inventory (LUI), the total actively farmed and available for farming area in Delta is about 8,653 ha, of which 188 ha is located outside of the ALR. Approximately 80% (7,515 ha) of the ALR is associated with farming activity. In addition, 10% of the ALR is available for farming but not presently farmed. Cultivated land represents about 65% of the ALR in Delta (Table 5-3) and about 2.2% of the actively farmed and available for farming area is outside of the ALR.

The area reported with farm tax status in 2010 was 6,901 ha.¹¹⁰ It would appear that not all properties used for farming claim farm tax assessment status, explaining why BC Assessment numbers are smaller than the LUI or the Agriculture Census.

Discrepancies between the farmed area of the LUI and Agriculture Census should be noted. This is due to the different reference years and the Census reporting practice of including farmed lands in the jurisdiction that operators reside in, regardless of farm location, under the farm headquarters rule. Nevertheless, the Census data should be regarded as reliable for characterizing Delta agriculture.

¹¹⁰ BC Assessment data, 2010.

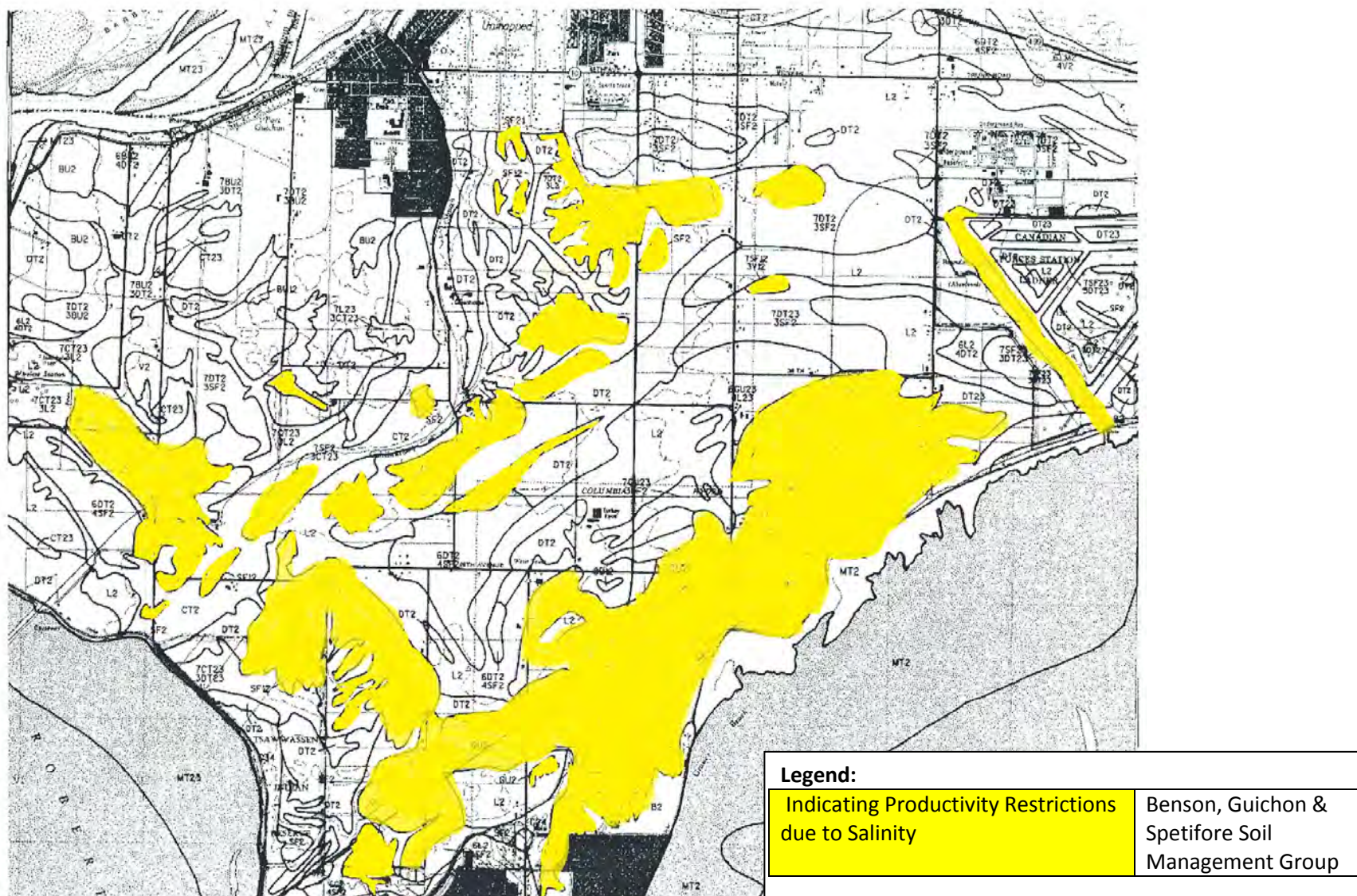


Figure 5-1: Location of Farmland with Productivity Restrictions due to Salinity, South Delta

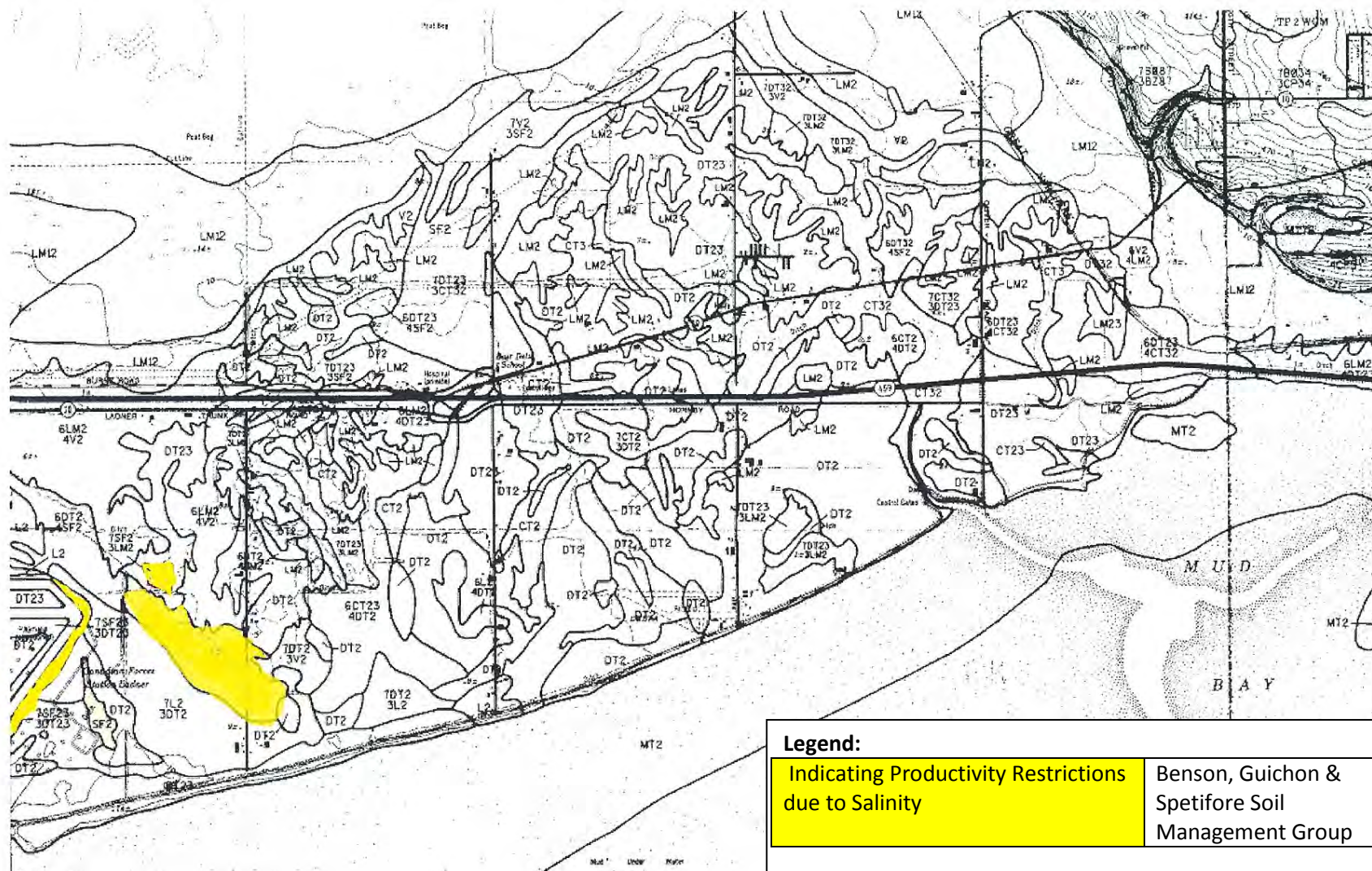


Figure 5-2: Location of Farmland with Productivity Restrictions due to Salinity, East Delta

Table 5-3: Agricultural Land Base of Delta

Land Category Status	In the ALR	Percent of ALR	Farmed Land		Percent of Row E: Total Active and Available Farming Area
	Ha		Outside the ALR	Total	
A. Active Agriculture	6,454	68.6%	188	6,642	76.8%
Cultivated land (1)	6,117	65.1%	188	6,305	72.9%
Farm infrastructure	179	1.9%	n/a	179	2.1%
Greenhouses	159	1.7%	<1	159	1.8%
B. Agriculture Support	1,061	11.3%			
Residential footprint	67	0.7%	n/a	67	0.8%
Other	994	10.6%	n/a	994	11.5%
C. Total Area of Actively Farmed Parcels (A+B)	7,515	79.9%	188	7,703	89.0%
D. Non-Farmed Parcels Available for agriculture(2)	950	10.1%	n/a	950	11.0%
E. Total Active and Available Farming Area (C+D)	8,465	90.0%	188	8,653	100.0%
	97.8%		2.2%	100%	
F. Non-Farmed Parcels Permanently Unavailable for agriculture	345	3.7%			
G. Total Non-Farmed Parcels (D+F)	1,295	13.8%			
H. ROWs/foreshore	560	6.0%			
I. Remnants (4)	33	0.3%			
J. Total Area Not Available for Farming (F+H+I)	938	10.0%			
K. Total ALR (E+J)	9,403	100.0%			

Source: BCMA. 2010. Delta Land Use Inventory. Preliminary findings.

Notes: n/a = not available; (1) Cultivated land includes vegetables; forage and pasture, vines and berries, grains and cereals, specialty, turf nut trees, nursery and tree plantations, and tree fruits; (2) Includes natural vegetation, landscaped vegetation, etc.; (3) Includes golf courses, playing field turf, ditches/dykes, etc.; (4) Remnants are represented by very small parcels or parcels that had very small areas in the ALR, and were not included in the detailed land cover analysis.

About 73% of the active and available farming area consists of cultivated land, while greenhouses occupy about 2% of the area. ¹¹¹

¹¹¹ Please note that these are crude extrapolations from BCMA's 2010 Land Use Inventory preliminary information. A final report has not yet been released.



Figure 5-3 depicts BCMAL Land Use Inventory information for Delta showing the location of farmland in the ALR being farmed and land not being farmed.

5.4 Air Resources

The Lower Fraser Valley airshed¹¹² includes Metro Vancouver and the Fraser Valley Regional District (FVRD), extending from Horseshoe Bay to Hope. Air is commonly trapped against the mountains allowing pollutant levels to concentrate in the Valley. In addition, the airshed extends across the international boundary into the US and is affected by developments there. Degraded air quality creates health risks, lower agricultural productivity, and significant economic impacts.

Emissions from all forms of transportation, industry, and community living are the focus of recent concern because of the strong growth and development of these sectors in the region and their contribution to greenhouse gases (GHGs) load, human health impacts, and effect on the environment. The primary pollutants of concern are ground level ozone (O₃), sulphur oxides (SO_x), and fine particulate matter (PM). Ground level ozone is produced through the reaction of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) in the presence of warm temperatures and sunlight.

Most of the smog in the Fraser Valley is generated locally. The major sources of VOCs are motor vehicles, the evaporation of gasoline from gas pumps and from solvents. Oxides of nitrogen are produced mainly by the high temperature burning of fuels, such as by internal combustion engines, certain manufacturing industries and factories. A significant amount of the total mass of pollutants contributing to ground-level ozone comes from light-duty vehicles.¹¹³

Since 1994, Metro Vancouver has implemented an Air Quality Management Plan that targets emission reduction measures for industrial point sources (including agriculture), area sources such as residences and the industrial-commercial-institutional sectors, and on-road and off-road mobile sources. FVRD is in the process of acquiring regulatory authority over its airshed and the ability to implement Metro Vancouver air quality standards.

Generally air quality in the Fraser Valley, as measured in several parameters, has been improving both for short term peaks and for average readings since measuring started in 1988.¹¹⁴ However, these changes are not reflected in ozone levels.

The measuring stations in North Delta and Richmond Airport show that the average ozone concentrations in Delta are lower than those in Hope (45 ppb in Delta vs. 64 ppb in Hope). There is no difference for particulate matter between Delta and Hope (PM_{2.5} ~4microgram/m³). Sulphur dioxide is mainly found around the Burrard Inlet, while Richmond airport and Richmond South are low (at <10microgram/m³). Nitrogen dioxide is elevated in North Delta and around the Richmond Airport, while it is low in Hope.

¹¹² An airshed is an area where the movement of air can be hindered by local geographical features such as mountains, and by weather conditions. <http://www.bcairquality.ca/airsheds/bc-airsheds.html>

¹¹³ Environment Canada. Fraser Valley smog. http://www.ecoinfo.ec.gc.ca/env_ind/region/smog/smog_e.cfm

¹¹⁴ <http://www.metrovancouver.org/about/publications/Publications/LowerFraserValleyAmbientAirQuality-2008.pdf>

BC's Air Action Plan has allocated funding to improve and enhance air quality across the province, with the goal of reducing O₃ and PM levels by 100% by 2010. Both of these pollutants are strongly correlated with the incidence of respiratory ailments and decreased lung function in humans. During the period of 1994 to 2004, ozone levels in the Fraser Valley exceeded the Reference Level (20 ppb) on average 40% of the time.¹¹⁵

Agriculture is responsible for about 10% of total GHG emissions in Canada.¹¹⁶ In BC, agriculture is responsible for about 3.5% of the province's greenhouse gas emissions.¹¹⁷ Nitrous oxide (N₂O), methane (CH₄) and carbon dioxide (CO₂) are the primary greenhouse gases released, accounting for 62%, 34% and 4% of agriculture's total emissions respectively.¹¹⁸ The primary agricultural sources of GHG emissions include emissions from natural gas and biomass fired boilers (CO₂ and PM), agricultural burning (PM), combustion of fossil fuels in farm vehicles and machinery (CO₂), enteric¹¹⁹ methane (CH₄), fertilizer volatilization (NO_x), and manures (PM, CH₄, NO_x and NH₃). In Delta, the release of particulate matter associated with the use of biomass heating systems for greenhouses had raised concerns related to the degradation of air quality. The province and Metro Vancouver collaborated on developing updated air emission standards¹²⁰ that were phased in starting in 2008. By the fall of 2010, all greenhouses in Metro Vancouver will have controls in place to meet those standards.

Agriculture has the opportunity to be a significant contributor to strategies to counter climate change. The most feasible options include switching from fossil fuels to biomass powered systems, carbon sequestration in the soil, perennial cropping, agro-forestry, and technological solutions to GHG management and conversion.

Air quality also influences agricultural productivity. The yield and quality of agricultural crops such as strawberry, lettuce and broccoli are negatively impacted by ozone enrichment resulting in yield losses as high as 15% in the Fraser Valley.¹²¹

5.5 Use of Supplemental Lighting

The greenhouse sector practice of using supplemental lighting to extend the growing season has come under public fire because of the negative response to glowing skies by neighbours and the community.

¹¹⁵ Environment Canada. Fraser Valley smog. http://www.ecoinfo.ec.gc.ca/env_ind/region/smog/smog_e.cfm

¹¹⁶ See Alberta Agriculture. Agriculture and Rural Development. Greenhouse Gas Emissions of the Agriculture and Agri-Food Industry - Things You Need To Know. [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/cl3009](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cl3009) Also see Greenpeace. 2008. Agriculture's climate change role demands urgent action. <http://www.greenpeace.org/canada/en/recent/agriculture-and-climate-change/>

¹¹⁷ Ministry of Agriculture. 2007. The BC Provincial GHG Inventory Report. http://www.agf.gov.bc.ca/resmgmt/ClimateActionPlan/toolkit_for_local_govt/What_toolkit.htm

¹¹⁸ Climate Change Action Fund Agricultural Awareness Partnership. Agriculture and greenhouse gases. <http://www.cattlemen.bc.ca/docs/ghg.pdf>

¹¹⁹ Enteric indicates intestinal origin and refers to methane gases released by ruminant livestock. See USDA. Ruminant livestock Frequent Questions. <http://www.epa.gov/rlep/faq.html>

¹²⁰ Greater Vancouver Regional District Agricultural Boilers Emission Regulation Bylaw No. 1098, 2008. http://www.metrovancouver.org/boards/bylaws/Bylaws/GVRD_Bylaw_1098.pdf

¹²¹ Janzen et al. 1999. Cited in Environment Canada. Fraser Valley smog. http://www.ecoinfo.ec.gc.ca/env_ind/region/smog/smog_e.cfm

Guidelines to mitigate lighting impacts have been developed for the sector. Techniques of reducing light emissions from greenhouses include side walls to block light transmission and management to ensure that at least 4 hours of darkness are provided every night between 4:00 pm and 12:00 midnight. However, there are no requirements to conduct the practices. In 2010, BCMAL has concluded that the sector's current guidelines are adequate to address concerns about light pollution and has not moved forward in developing a ministry standard.

5.6 Organic Resources

Manure is the agricultural waste¹²² most widely used as a crop nutrient input on forage and other field crops. In mixed operations or where a suitable land base is available, manure application is an effective and economical method of using livestock waste in a beneficial manner to grow crops to support livestock production. Similarly, composted poultry manures and litter are applied to vegetable crops in horticultural operations and as an organic supplement to the soil in perennial crops. Composted manures can also be a good nutrient source for natural and organic growers.¹²³

Based on production within the municipality, Delta is an organic matter deficient area overall and many field crop producers have imported poultry manure from other Lower Mainland municipalities. After substantial growth in this market, it appears that the demand for poultry manure in Delta may have levelled out, with farmers now meeting their organic requirements.

On-farm composting is conducted for the purpose of producing growing medium for plants and a stabilized source of organic nutrients. Composting of other wastes is not considered to be agricultural composting. The Agricultural Waste Control Regulation¹²⁴ requires that all agricultural waste composted on a farm must be used on that farm. Wood waste is the only non-agricultural waste that can be co-composted with agricultural waste, and the resulting compost may be used on the farm or be sold off the farm, provided the wood waste was used on the farm for an allowed use.

It is possible, with ALC permission, for an on-farm composting operation to bring in general organic matter if the facility has a strong agricultural orientation, e.g., with animal wastes being a prime input into the process.¹²⁵ One turf operation in Delta takes in hatchery waste and various other organic products for composting to make soil amendment primarily for its own operations. There have been complaints about odours emitted by this farm.

Other organic materials (e.g., pulp mill sludge, tankage, greenhouse organic waste) have been applied to isolated parcels of Delta farmland in the past. Some of these materials are reported to have lingering detrimental impacts on the soils.

¹²² Agricultural waste includes manure, used mushroom medium and agricultural vegetation waste but does not include (a) human or animal food waste that is diverted from residential, commercial or institutional sources (b) waste materials derived from non-agricultural operations, or (c) wood waste derived from land clearing, construction or demolition.

¹²³ See Soil Conservation Council of Canada. 2009. Composted manure has a good fit with organic growers.

http://www.soilcc.ca/ggmp_region/bc-03.php

¹²⁴ See http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_131_92

¹²⁵ BCMAL. Composting Factsheet. <http://www.agf.gov.bc.ca/resmgmt/publist/300Series/382500-12.pdf>

5.7 Delta Flood Control and Drainage

Delta's farmland is situated in the Fraser River floodplain. The lowlands of Delta are at or below sea level. Consequently, most of Delta is surrounded by dikes to prevent flooding.

Agricultural water management concerns are related to the flooding and drainage of lowland floodplain, followed by the need for irrigation water during months of drought during the growing season. Historically, water management systems were created primarily to improve drainage conditions for farming and reclaim flood plains, by dyking, for cropping.

Dikes protect Delta farmland from flooding by the Fraser River in the spring and from high tides and storm surges in the winter. Delta's dikes surround the entire lowland area, protecting the community from high water levels along the Fraser River, the Strait of Georgia and Boundary Bay. Total river bank dikes and sea dikes consist of more than 61 kilometres. The dike system has been designed to the 1:200 year return period, which means the risk of flooding in any given year is 0.5%.¹²⁶ The risk of flooding could increase in the future if climate change were to create elevated runoff in the Fraser basin and/or sea levels were to rise.

Water is removed from Delta's lowland through a drainage system that ultimately pumps the water into the ocean or conveys it into the Fraser River. In the winters, low lying areas may be subjected to localized flooding from large rain storms. Some 30 pump stations and flood boxes, as well as ditches regulate water levels.

5.8 Water Supply and Agricultural Irrigation

Since Delta experiences a water deficit of more than 150 mm seasonally, in order for crop production to be optimized it is necessary to irrigate. Delta farms rely on a combination of municipal and surface water for their irrigation needs. The smaller farmers rely primarily on municipal water for irrigation needs. The primary issues related to agricultural water in Delta include:

- Surface water supply infrastructure
- Surface water quality
- Delivery fees for municipal water.

5.8.1 Surface Water Supply and Quality

Most of the water supply for agriculture comes from surface water sources, such as rivers and rainfall captured in ditches. Delta diverts irrigation water by gravity feed from the Fraser River at 12 locations.¹²⁷ The water is managed by the Corporation of Delta within the drainage/irrigation network by a system of weirs and 3 internal pumps. The Corporation consults with farmers to balance the irrigation and drainage needs for individual properties along the system.

¹²⁶ http://www.corp.delta.bc.ca/EN/main/residents/public_safety/26737/26719/flood_hazards.html

¹²⁷ Golder and Associates. 2008. Agricultural water supply study in the Metro Vancouver region. Report prepared for Metro Vancouver.

<http://www.metrovancouver.org/planning/development/agriculture/AgricultureDocs/AWSSReportMar3-2008.pdf>

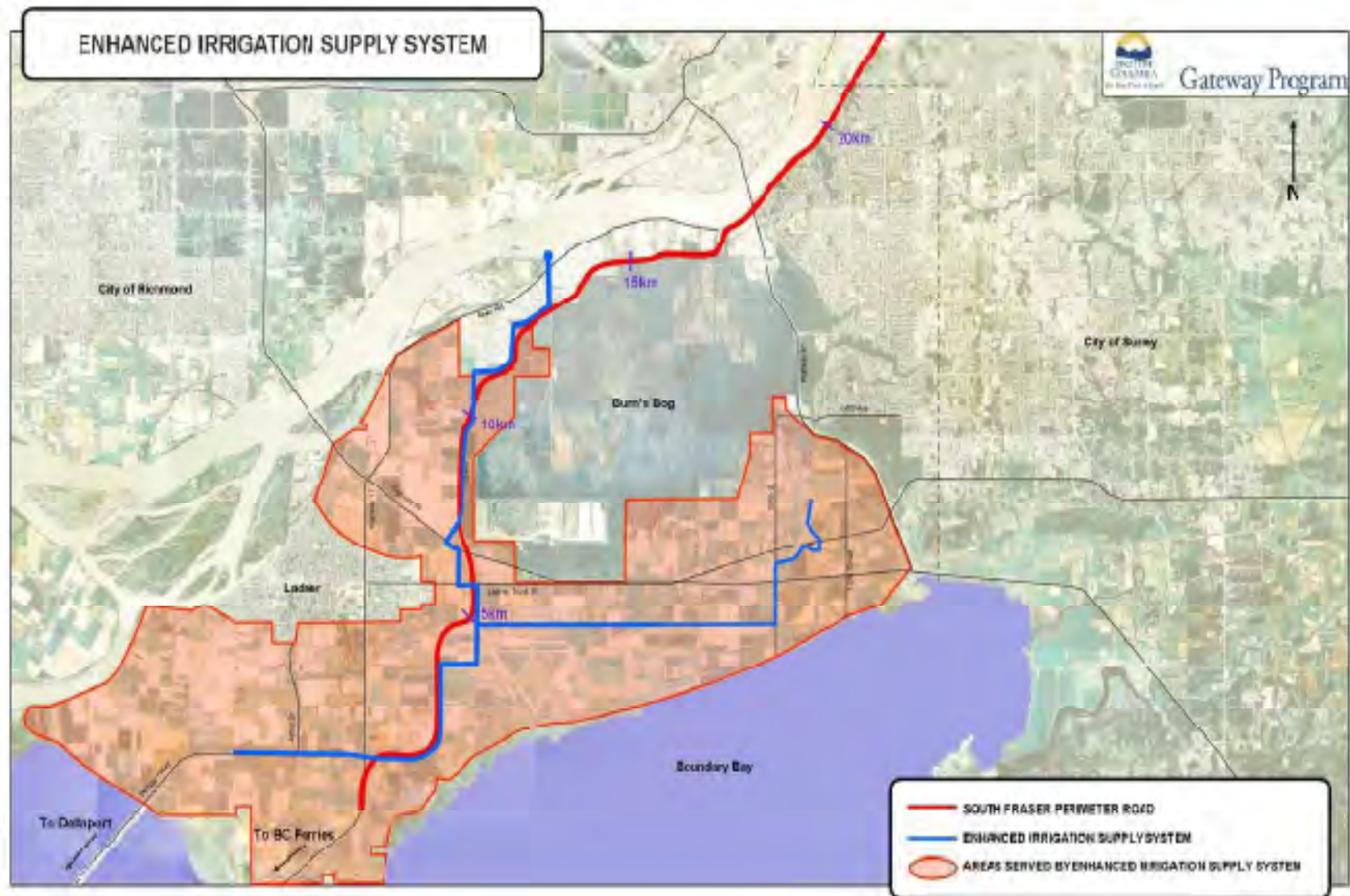


Figure 5-4: Drainage and Irrigation Improvements associated with the South Fraser Perimeter Road.

(Source: Gateway Program. http://www.corp.delta.bc.ca/assets/HRCP/PDF/gateway_sfpr_update.pdf#search=%22irrigation%22)

The limiting factor in terms of supplying Delta farmers with water is the absence of infrastructure to get the water to farmers, not water supply. Current characteristics of the system and limitations to peak flow will not allow for irrigation of all areas at the same time. Improved irrigation efficiency could offset current water supply shortages in those parts of Delta with access to irrigation ditches. Cranberry farmers also store water on their properties later use

One of the ways of mitigating the loss of farmland caused by the construction of the South Fraser Perimeter Road (Gateway Program) has been to create agricultural benefits by improving irrigation capacity along the route (see Figure 5-4). Options are being investigated to divert water for agriculture from the Fraser River at 80th Street. While the improvements are welcomed, it has been emphasized by farmers that the measures do not increase access to irrigation in many other areas of Delta, including Westham Island where the local water system does not have the capacity to meet current irrigation demand.

The proposed SFPR improvements are anticipated to provide sufficient irrigation to 4,500 ha in Delta, assuming that 75% of the area was irrigated at any point in time. The project will have the ability to increase supply in the future to all of the potentially irrigable area, not including Westham Island. Operation of the new irrigation works will be monitored for a period of five years to provide a better understanding of future irrigation water needs.

Water from drainage ditches in Delta is likely not meeting water quality guidelines for crop washing, confined livestock watering, irrigation of crops to be eaten raw, or for general irrigation at certain times of the year.¹²⁸ The water quality of surface water may be affected by a variety of factors including farm runoff of pesticides, fertilizers and manures. As such, food safety protocols make municipal water the preferred choice for greenhouse vegetable growers and many field crop producers. Food wholesalers may be requiring more water quality assurances for field crops in the near future.

Delta farmers have expressed concern about potential water quality issues associated with the drainage of stormwater from Tilbury industrial area into local irrigation channels.

The quality of Fraser River water can be affected by groundwater contamination by agricultural activities during times of high runoff, public and private wastewater treatment plants, septic overflow, and urban stormwater discharges. Water quality investigations (2002) indicated that water quality objectives are met between July and October but exceeded in other months of the year due to wastewater treatment plants not undergoing disinfection practices.¹²⁹

Irrigation water diversions from the Fraser River have also recently experienced higher salt concentrations due to tidal action.

5.8.2 Municipal Water Supply

Within Metro Vancouver, the Greater Vancouver Water District (GVWD), a separate legal entity established in 1924, is responsible for supplying potable water to most member municipalities. The water is stored in reservoirs in the Capilano, Coquitlam, and Seymour watersheds. Delta purchases water from the GVWD and delivers it to community residents, including farmers, at the bulk rate plus an

¹²⁸ Ibid.

¹²⁹ Ibid.

allowance for the cost of water delivery. Greenhouse growers are the main agricultural users of municipal water.

Delta does not guarantee constant pressure or a continuous supply of water and Individual users are required to install their own equipment to ensure additional requirements respecting guaranteed supply, pressure, and purity.¹³⁰ Pressure sustaining valves are required at greenhouse connections, which stop flow to the greenhouse operations when the pressure drops below 40 pounds per square inch (psi). The costs of installing water services are recouped from applicants. Water connection fees are outlined in Schedule A(3) of the Bylaw.

Delta's ongoing water delivery charges consist of the following:

- Each parcel of Delta land assessed as farm is required to pay an annual flat farm rate of \$95.00
- Agricultural water users pay a minimum quarterly charge of \$25.00, and increasing block rates of \$0.61 per m³ for the first 8,000 m³, and \$0.98 per m³ thereafter.
- The Agricultural Water Rate Area comprises all agricultural land (see Figure 5-5).

Compared to other bulk consumers in the municipality, agriculture enjoys a municipal delivery rate discount of \$0.10 per m³ on the first 8,000 m³ but nothing on increasing volume thereafter. Delta's charges for water delivery are among the highest in Metro Vancouver because of substantial infrastructure upgrades, including those for improving the municipal water system in response to the demands of greenhouses. Nevertheless, there are some areas that may be refused a connection or only allowed downsized flow as not doing so would create excessive demand on the system. The Corporation has recently installed meters and backflow protection for all agricultural connections, regardless of the size of the connection.

The GVWD provides water to member municipalities at bulk rates which are based on an analysis of the cost of service. Rates in 2007 were \$0.38/m³ for the peak season of June through September and \$0.33/m³ during the remainder of the year.¹³¹ In 2010, the average GVWD bulk water rate is \$0.4955 per m³. The rate is anticipated to increase to \$0.8009 per m³ by 2015 to cover extra costs relating to maintenance of aging infrastructure, infrastructure improvements, and treatment plant upgrades.¹³²

The bulk rates charged for water by Metro Vancouver are the same for all municipalities and independent of the intended use of the water. In 2007, Delta Council requested that Metro Vancouver reduce bulk rates for water for agricultural production by 50% as a means to support local agriculture. Metro Vancouver rejected the argument on the basis that it did not cost any less to service agricultural users than other users and that artificially lower rates for agriculture would not be fair and equitable to other users.¹³³ Other municipalities have supported Delta's request. In 2010, Metro Vancouver has

¹³⁰ Delta Waterworks Rates and Regulation Bylaw No. 5781, 2000.

<http://delta.fileprosite.com/contentengine/launch.asp?ID=10969>

¹³¹ Golder, op. cit.

¹³² Metro Vancouver Finance Committee 2011 Pre-Budget Discussion. 2010. June 10.

http://www.metrovancouver.org/boards/Finance%20Committee/Finance_Committee_-_June_10,2010_-_Additional_Item.pdf

¹³³ Various correspondence between Delta and the GVRD. 2007.

http://www.metrovancouver.org/boards/Agriculture%20Committee/Agriculture_Committee-March_6_2008-Item6.3.pdf

SCHEDULE 'F' - AGRICULTURAL WATER RATE AREA - 2010

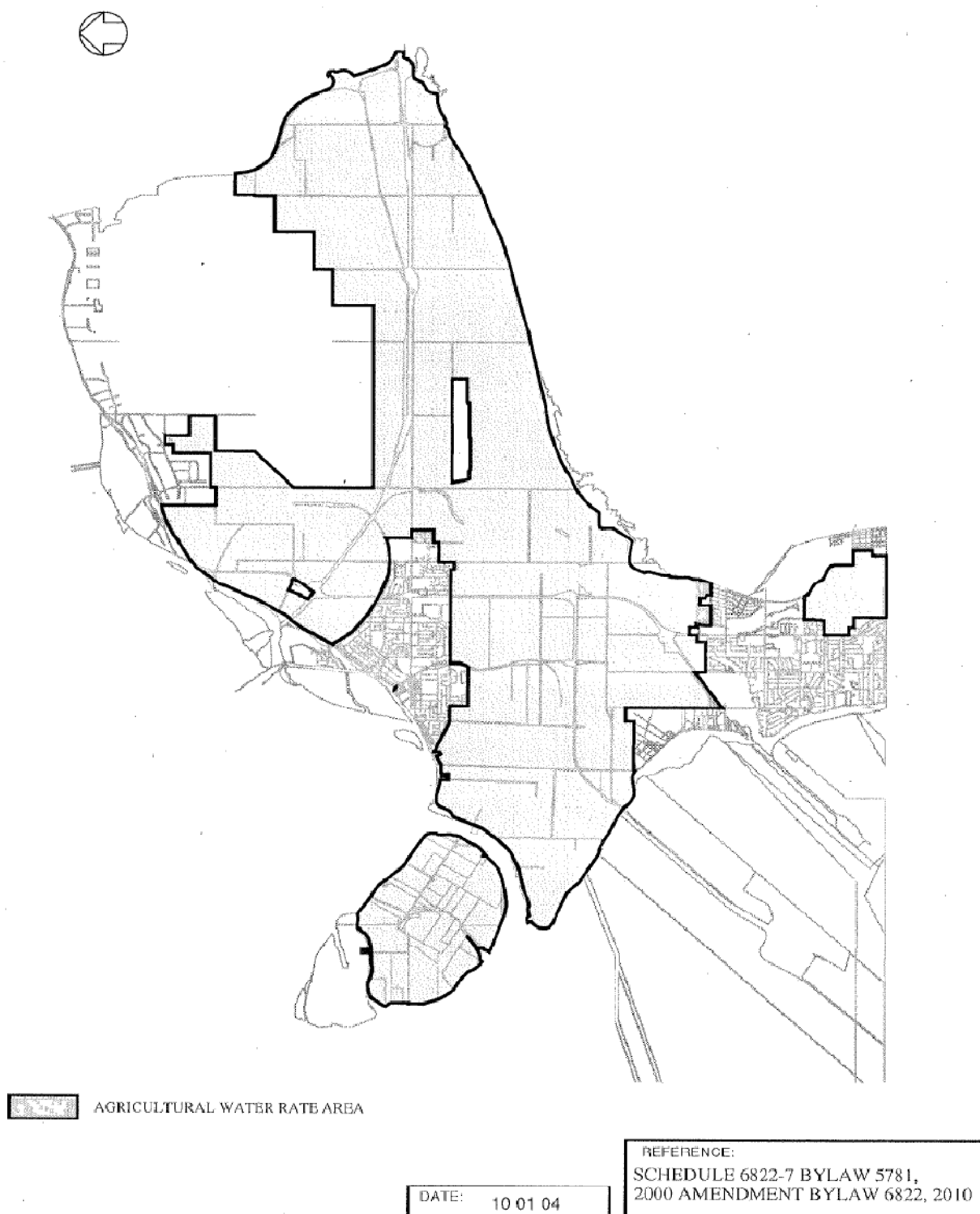


Figure 5-5: Delta Agricultural Water Rate Area.

(Source: Delta Waterworks Rates and Regulation Bylaw No. 5781, 2000.

<http://delta.fileprosite.com/contentengine/launch.asp?ID=10969>

indicated that an amendment to the GVWD Act would be required to offer preferential rates to agriculture.¹³⁴

5.8.3 Groundwater Supply

None of the farmers rely on groundwater for water supply, generally due to groundwater salinity and brackishness. As such, domestic water for household purposes and livestock is supplied by municipal water.

5.8.4 Agricultural Irrigation

In 2005, the irrigated area (3,208 ha) represented about 51% of the land area in crops, up 84% from the cropped area irrigated in 2000 (Table 5-4 and Figure 5-6). As Figure 5-7 indicates, crops irrigated in 2005 were predominantly field crops, including potatoes (24%), vegetables (25%), and fruits/berries (13%). About 34% of the Census farms indicated the use of irrigation in 2005, which is similar to the proportion irrigating in 1995. The potentially irrigable area of Delta is about 6,300 ha, excluding Westham Island.

Irrigation also is used to leach salt out of the saline deltaic soils into drainage ditches so that it can be pumped out of the system. Hence, irrigation can be used to rehabilitate the soil characteristics of farmland with salinity problems.

In 2009, Metro Vancouver started moving forward on water supply options for agricultural purposes. The report¹³⁵ noted several trends affecting agricultural water use with implication for water supply:

- The demand for the quantity of water from agriculture is increasing due to changing cropping patterns as higher value crops tend to require more water.
- Greater demand from agriculture for better quality water as a result of market forces and regulations. Wholesale buyers are increasingly demanding that producers use potable water to irrigate fruits and vegetables due to food safety concerns
- The total cost of the water delivery system is a key issue for agriculture when water pricing policies require rural users to pay the cost of new infrastructure as well as operating, maintenance and administrative costs.
- Increasing uncertainty being created by climate change.

In view of Metro Vancouver's commitment to increase the amount of actively farmed land in the region by 2010, the recommendations of the report were to proceed with development of an agricultural land use inventory to assist in the development of an irrigation water demand model for the region, followed by comprehensive planning incorporating water efficiency improvements.

¹³⁴ Metro Vancouver Water Committee. Regular Meeting. 2010. Mar 17.

http://www.metrovancouver.org/boards/Water%20Committee/Water-March_17_2010-Agenda.pdf

¹³⁵ Report to the Metro Vancouver Agriculture Committee. 2009. Sept.

http://www.metrovancouver.org/boards/Agriculture%20Committee/Agriculture-September_3_2009-Agenda.pdf

This report is based on the findings of the Golder report, op cit. and others commissioned by Metro Vancouver.

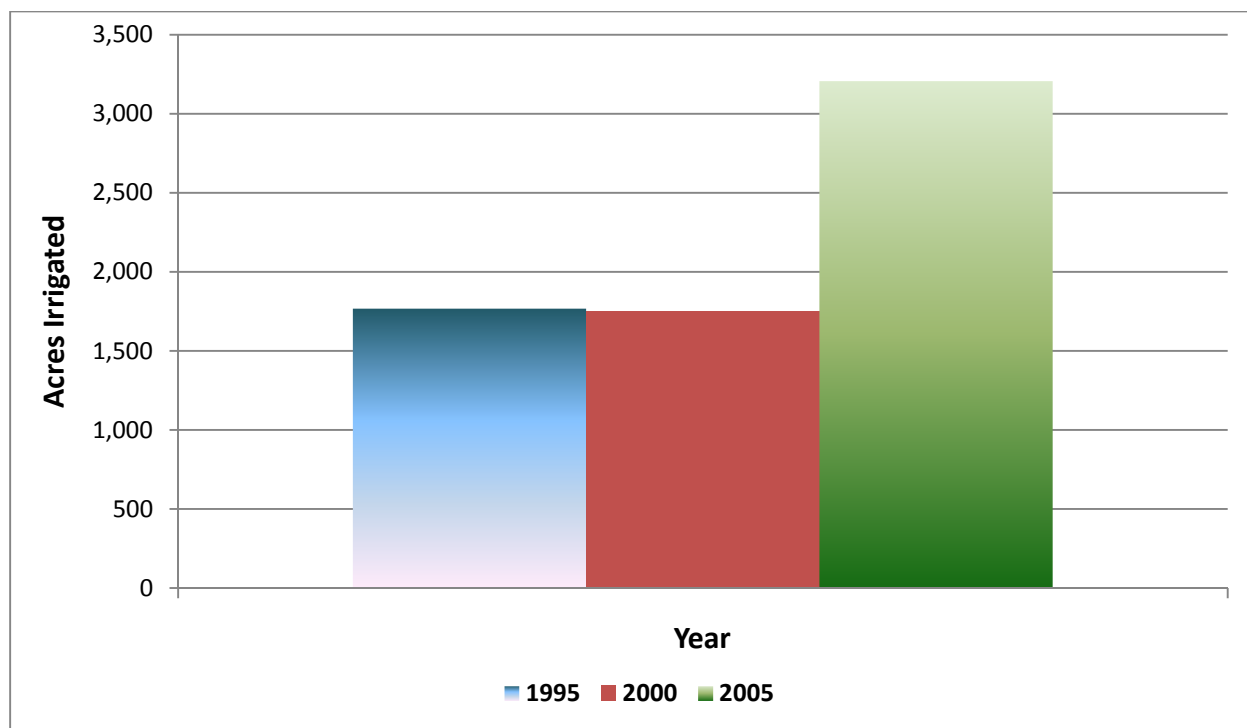


Figure 5-6: Farmland Irrigated in Delta, 1995 to 2005

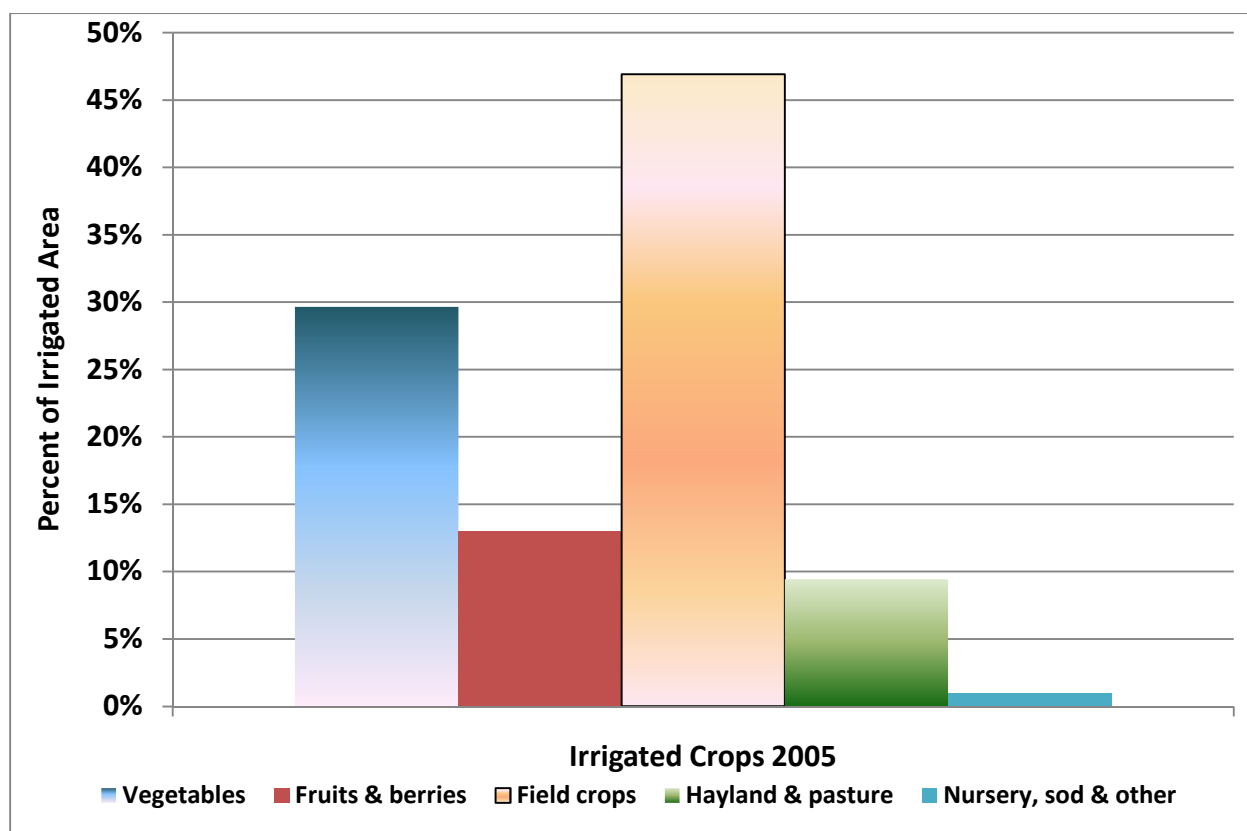


Figure 5-7: Proportion of Area Irrigated, by Crop Type, Delta, 2005

Table 5-4: Irrigated Area in Delta, 1995 to 2005

Crop Irrigated	1995		Percent Crop Ha	2000		Percent Crop Ha	2005		Percent Crop Ha	Percent Irrigated Ha
	# farms	# ha In crop		# farms	# ha In crop		# farms	# ha In crop		
Vegetables	--	--	--	--	--	--	25	951		29.6%
Fruits	--	--	--	--	--	--	17	418		13.0%
Field crops (1)	--	--	--	--	--	--	22	1,505		46.9%
Hay land & pasture	--	--	--	--	--	--	10	303		9.4%
Nursery, sod & other	--	--	--	--	--	--	6	31		1.0%
Total Irrigated	73	1,768	29.2%	63	1,748	27.6%	62	3,208	50.9%	

Source: Statistics Canada. Agricultural Census

Notes: (1) Includes potatoes

5.9 Suppliers of Inputs and Services to Agriculture

Delta farmers in all sectors have good access to inputs and farm services.

5.9.1 Community –Based Services and Infrastructure

From an agricultural perspective, infrastructure in Delta has the following characteristics:

- A major ferry terminal on the Roberts Bank provides direct access to the southern and mid-island areas of Vancouver Island
- Highway 99, linking Delta to Vancouver and the US, passes through Delta and links up directly with the I-5, the major traffic route down the US Pacific Coast corridor
- Delta is in close proximity to Vancouver International Airport (YVR) and in easy access to the Abbotsford Airport
- Boundary Bay Airport located in the municipality with potential for agricultural application
- The new South Fraser Perimeter Road links with Deltaport Way to the cargo terminal and, with appropriate access, could provide Delta farmers with improved access from Delta to all points east
- A freight rail line that crosses the municipality and terminates at the Westshore coal terminal
- Ready access to natural gas, 3-phase hydroelectricity, and telecommunications.

There are also some local infrastructure issues that are constraining agriculture in Delta:

- Local rural transportation routes are heavily congested with non-rural traffic creating safety concerns for operators
- Some local traffic plans make farm parcels almost inaccessible to some types of farm equipment, such as lack of provision for farm equipment crossing Highway 17
- Constriction to truck traffic at the Westham Island bridge and impairment of the ability of farmers to take produce to market.

5.9.2 Agricultural Input Suppliers

The input suppliers in Delta include primarily feed, fertilizer, pesticides, seed, and petroleum distributors and custom applicators. There is one local supplier of greenhouse equipment. Most agricultural inputs and services are available locally, but from a few surviving distributors that source products from other regions and provinces.

Equipment and machinery dealerships and feed manufacturers have moved up the Fraser Valley into the Abbotsford area,¹³⁶ in response to the declining demand for these services in Metro Vancouver. Custom services are generally becoming more difficult because of the difficulties in moving farm equipment on the congested traffic routes in Delta.

Services to agriculture located in Delta include:

- Location of offices of the BC Certified Seed Potato Growers Association, BC Potato & Vegetable Growers Association, Fraser Valley Bush Bean Growers' Association, and Fraser Valley Pea Growers' Association, Fraser Valley Organic Producers Association
- Home of I. Paton & Associates Ltd. Auctioneers, Kelly Farms Land Leveling, Tri-Way Farms Laser Leveling Ltd

¹³⁶ In fact, about 40% of the Abbotsford agri-business sector is supported by farms outside the municipality. Zbeetnoff Agro-Environmental and Serecon Management Consulting Inc. 2009. Abbotsford Agricultural Profile.

- Kubota Canada Ltd., Crofton Grower Services Ltd., Evergro Canada Inc., Roddick Feed & Farm Supply, Pacific Forage Bag Supply Ltd., Phero Tech Inc..

There are several businesses offering packaging, food processing equipment and supplies located in Delta.

5.10 Agricultural Associations and Events

Agriculture's ongoing contribution to the quality of community is evident in Delta:

- Delta Farmers Institute – representing the interests of many of the larger commercial farmers in Delta
- Delta Agricultural Society – founded in 1888, with a history of service to agriculture. In recent years, the society has funded numerous community works including the Delta Hospital, McKee House Senior Recreation Centre, Delta Farmland and Wildlife Trust, and the Delta Museum and Archives.¹³⁷
- Agricultural rural heritage – emphasizing the prominent role that farming and fishing has played in the community's identity and supported by about 190 heritage buildings
- Delta Farm and Wildlife Trust - "Day at the Farm" event featuring an annual educational event at a local farm.

5.11 Agro-Industrial Sector

About 50 food product distributors and /or food manufacturers are located in Delta, with products ranging from pastas, cereals and bakery products to beverages, sauces and food ingredients. In addition, about a dozen Delta companies supply products and services used by food manufacturers. A common characteristic of this subsector is that it uses very little, if any, Delta farm production as raw resources to its manufacturing processes.

There is no processing of conventional or organic produce in Delta. With the closure of Snowcrest Packers in Abbotsford in the spring of 2010, processing markets for beans, peas and corn production are expected to be drastically reduced or eliminated in the future. The two remaining vegetable processors in the Fraser Valley are Lucerne and BC Frozen Foods, both located in the FVRD. Most berries leave Delta for packing elsewhere and shipping to the US for processing.

There are only a few food processors utilizing Delta farm production that remain in Delta, represented by two dairy processing companies, Agropur (Island Farms and Olympic dairies) and Jersey Farms Ltd. There are also about a half dozen fish processors based in Delta.

5.12 Local Agricultural Markets and Distribution

5.12.1 Wholesale/Retail Markets

Vegetable crops regulated by the BC Vegetable Marketing Commission are sold to the wholesale and retail trade through BC Fresh Vegetables Inc. (formerly Lower Mainland Vegetable Distributors), an authorized agency for the Commission. BC Fresh product is stored in 3 on-farm coolers situated in Delta

¹³⁷ <http://memorybc.ca/5059;jsaar>
<http://www.flickr.com/photos/bobkh/2401993640/>

and Surrey. The regulated products include beets (tops off); green and red cabbage; carrots (tops off); onions; parsnips; potatoes; rutabagas; and white turnips.

Fraserland Organics Inc., also an authorized agency for the Commission, markets locally produced organic potatoes and uses international distributors (e.g., VivaTerra Organics). Other organic field products may be marketed independently by growers to consumers directly, to wholesalers, or directly to retailers and foodservice companies.

There are 5 greenhouse vegetable marketing agencies in Delta, attached to production operations. These are BC Hothouse Foods Inc., Country Fresh Produce Inc., Global Greenhouse Produce Ltd., Greenhouse Grown Foods Inc., and Village Farms Operations Canada Inc. Some greenhouse growers also market product through distributors, the largest of which is The Oppenheimer Group based in Vancouver, with a network extending throughout the US and Chile. Organic greenhouse vegetable growers may also market through smaller organic distributors such as Discovery Organics and SunOpta Inc. (Pro-Organics) or directly to food retailers (e.g., Thrifty's Foods).

5.12.2 Direct-to-Consumer Farm Markets

There are 7 farms in Delta marketing farm products directly to the public from the farm gate. Two of these businesses offer wine and related processed farm products (jellies, juices, jams) to agri-tourists. Earthwise Society, in Tsawwassen, features public education workshops and events in addition to a farm store.

There are no local meat and animal product sales. Recent changes in provincial law have severely limited the feasibility of slaughter options available to small scale producers.

Limited trade is done in unregulated eggs sold from the farm gate and through the Farmers' Markets. These may be offered in conjunction with a selection of a few vegetables.

5.12.3 Farmers Markets

The Ladner Village Market runs biweekly and seasonally on Sundays in Ladner and offers local produce.

6.0 Farm Characteristics of Delta Agriculture

Three sources of information have been used to characterize the land use in the Delta agricultural sector. These sources are the Statistics Canada Agriculture Census (SC 2005), BC Ministry of Agriculture and Lands Land Use Inventory, (LUI 2010), and BC Assessment data (AA 2009).

6.1 BCMAL Land Use Inventory 2010

The LUI was conducted by Ministry staff through a vehicle drive-by observation of land use, supported by aerial survey maps and BC Assessment data. The information recorded included land cover features and land use.

The 2010 LUI surveyed a total of 11,907 ha consisting of 8,843 ha in the ALR and 3,064 ha of rural land in Delta outside of the ALR. The LUI surveyed 945 parcels in the ALR and 26 parcels outside of the ALR.

Based on GIS calculations of the Agricultural Land Commission,¹³⁸ the ALR in Delta contains 9,403 ha. This leaves 560 ha (6%) of the ALR that was not surveyed, accounted for by Rights of Way (ROWs) and foreshore (550 ha and 9 ha, respectively).

6.1.1 Land Cover

Table 6-1 indicates that about 67% (6,341 ha) of the surveyed area in the ALR is managed for terrestrial crops. In addition, 188 ha outside of the ALR in Delta are also cultivated. The “built objects” category comprises 745 ha in the ALR (7.9%) and is represented by greenhouses, farm structures, residences, transportation, linear constructions (e.g. dykes, ditches, communications, utilities), and non-linear constructions (e.g., other non-farm uses in the ALR).

Other land uses in rural Delta found predominantly in the ALR include managed vegetation (97% in the ALR), artificial waterbodies (95%) and built objects (82%).

The natural and semi-natural vegetation classification is represented by lands with greater than 10% cover consisting of native vegetation species and not requiring human activity to be maintained. This category contains 1,096 ha of the ALR (12%). It may be noted that natural and semi-natural vegetated areas in the ALR comprise 47% of the total natural and semi-natural vegetated area in the surveyed areas¹³⁹ of Delta (see Table 6-1).

¹³⁸ Provided to BCMA during the course of the Land Use Inventory.

¹³⁹ Most notably, the surveyed areas do not include most of Burns Bog.

Table 6-1: Land Cover within the ALR and Rural Areas of Delta, 2010

Land Use Present	Area (Ha)				
	In the ALR	% of ALR	Outside the ALR	Total Area	% of Total in the ALR
Human Activity (1) - Vegetated -Cultivated	6,341	67.4%	188	6,529	97.1%
Human Activity - Built Objects (3)	745	7.9%	159	904	82.3%
Human Activity -Non-Built or Bare (4)	171	1.8%	232	403	42.4%
Human Activity - Vegetated – Managed (5)	323	3.6%	16	339	95.2%
Human Activity - Artificial Water Bodies (6)	109	1.2%	3	112	97.4%
Natural & Semi-Natural (2) (vegetated)	1,096	11.6%	1,222	2,318	47.3%
Natural & Semi-Natural (vegetated wetlands)	37	0.4%	963	1,000	3.7%
Natural & Semi-Natural (water bodies)	21	0.2%	273	294	7.2%
Rights of Way and Foreshore	560	6.0%	n/a	n/a	n/a
Totals	9,403	100.0%		11,907	

Notes: (1) Human activity represents land cover originating from human activities and maintained by human activities; (2) Natural & Semi-Natural indicates land cover not originating from human activities or not being maintained by human actions and includes regenerating fields and old farm fields; (3) Represents lands covered by built structures and their associated yards, enclosures, roads, parking, ditches, dikes, berms; (4) Represents bare areas such as piles, fill dumps, dirt parking, storage areas, extraction and disposal sites; (5) Includes vegetated lands seeded or planted for landscaping, dust or soil control but not cultivated for harvest or forage; (6) Includes reservoirs, canals and artificial lakes.

Source: BCMAL. 2010. Delta Land Use Inventory

6.1.2 Primary Agricultural Land Use Activities

The total area of primary agricultural activities includes farming activities outside of the ALR, and represent about 3% of the farmland base in Delta. As indicated in Table 6-2 and Figure 6-1, the LUI indicates that primary agricultural activities by area of land use are: managed forages (25%), potatoes (19%), other field vegetables (19%), berries (19%) and cereal grains (7%). The distribution of forage production, vegetable production, potato production and cereal grains in Delta is indicated in Figures 6-2 to 6-5.

Table 6-2: Distribution of Land Use by Primary Cropping Activity, Delta, 2010

Primary land use activity	Area of parcels in the ALR	Area of parcels outside the ALR	Total Area	% of Cultivated Area
	Ha			
Forage	1,094	38	1,131	25%
Potatoes	1,169	67	1,236	19%
Vegetables (not including potatoes)	1,127	21	2,484	19%
Vines & berries	1,241	< 1	1,241	19%
Grains, cereals, oilseeds	372	61	433	7%
Unused (1)	322	<1	322	5%
Pasture	240	8	248	4%
Other	123	< 1	123	2%
Specialty, Turf, Nut trees	57	< 1	57	< 1%
Nursery & Tree plantations	6	2	7	< 1%
Tree fruits	< 1	< 1	< 1	< 1%
Totals	6,341	196	6,537	100.0%

Notes: 126 ha of this total are enrolled in DFWT set-asides.

Source: BCMAL. 2010. Delta Land Use Inventory

Table 6-3 indicates the presence of livestock on farmland parcels in Delta. Approximately 64% of the 111 parcels with livestock had horses, 10% had dairy animals, 9% had poultry and 7% of parcels with livestock raised beef. While all dairy and two poultry operations consisted of intensive operations, most of the other livestock operations are small and under non-intensive management. The distribution of livestock activities in Delta is presented in Figures 6-6 to 6-9.

Table 6-3: Presence of Livestock by Parcel, Delta, 2002

Primary land use activity	Number of parcels	% of parcels	Predominant Scale of Activity	Average parcel size (ha)
Horses/equine	71	64%	Small (2-25 animals)	10
Dairy	11	10%	Large (>100 animals)	26
Poultry	10	9%	Small (<100 birds)	14
Beef	8	7%	Small (2-25 animals)	21
Sheep	3	3%	Small	5
Goats	3	3%	Small	22
Pigs	1	1%	Small	8
Totals	111	100.0%		

Source: BCMAL. 2010. Delta Land Use Inventory

Table 6-4 indicates that the predominant berry crop in Delta is blueberries, representing 68% of berry area, followed by cranberries (25%). The distribution of berry operation in Delta is presented in Figure 6-10.

Table 6-4: Farmland in Berries, Delta, 2010

Primary land use activity	Area of parcels in the ALR	Area of parcels outside the ALR	Total Area	% of Berry Area	% of Cultivated Area
	Ha				
Blueberries	848	< 1	848	68%	13%
Cranberries	305	< 1	305	25%	5%
Strawberries	63	-	63	5%	<1%
Raspberries	13	<1	13	1%	<1%
Blackberries	1	<1	1	<1%	<1%
Mixed berries	12	<1	12	<1%	<1%
Totals	1,241	<1	1,241	100%	19%

Source: BCMAL. 2010. Delta Land Use Inventory

Table 6-5 presents current information on greenhouse operations in Delta. Most glass greenhouses are large commercial operations. Almost all poly greenhouse operations are small operations. The distribution of greenhouse operations in Delta is shown in Figure 6-11.

Table 6-5: Greenhouses in Delta, 2010

Primary land use activity	Area of parcels in the ALR	Area of parcels outside the ALR	Total Area	Number of greenhouse activities
	Ha			
Glass greenhouses	152	<1	152	15
<1 ha				4
>4 ha				11
Poly greenhouses	11	<1	11	18
<1 ha				16
>4 ha				2
Totals	163	<1	163	33

Source: BCMAL. 2010. Delta Land Use Inventory

6.1.3 Potential for Agricultural Activity Expansion

The potential for agricultural activity expansion is primarily contingent on the ability to encourage idle or non-agricultural land uses in the ALR to convert to agriculture. Approximately 50 parcels are reported to have 196 ha of farmland that is not being used. The location and distribution of land considered to be available for agriculture in Delta is shown in Figure 6-12.

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

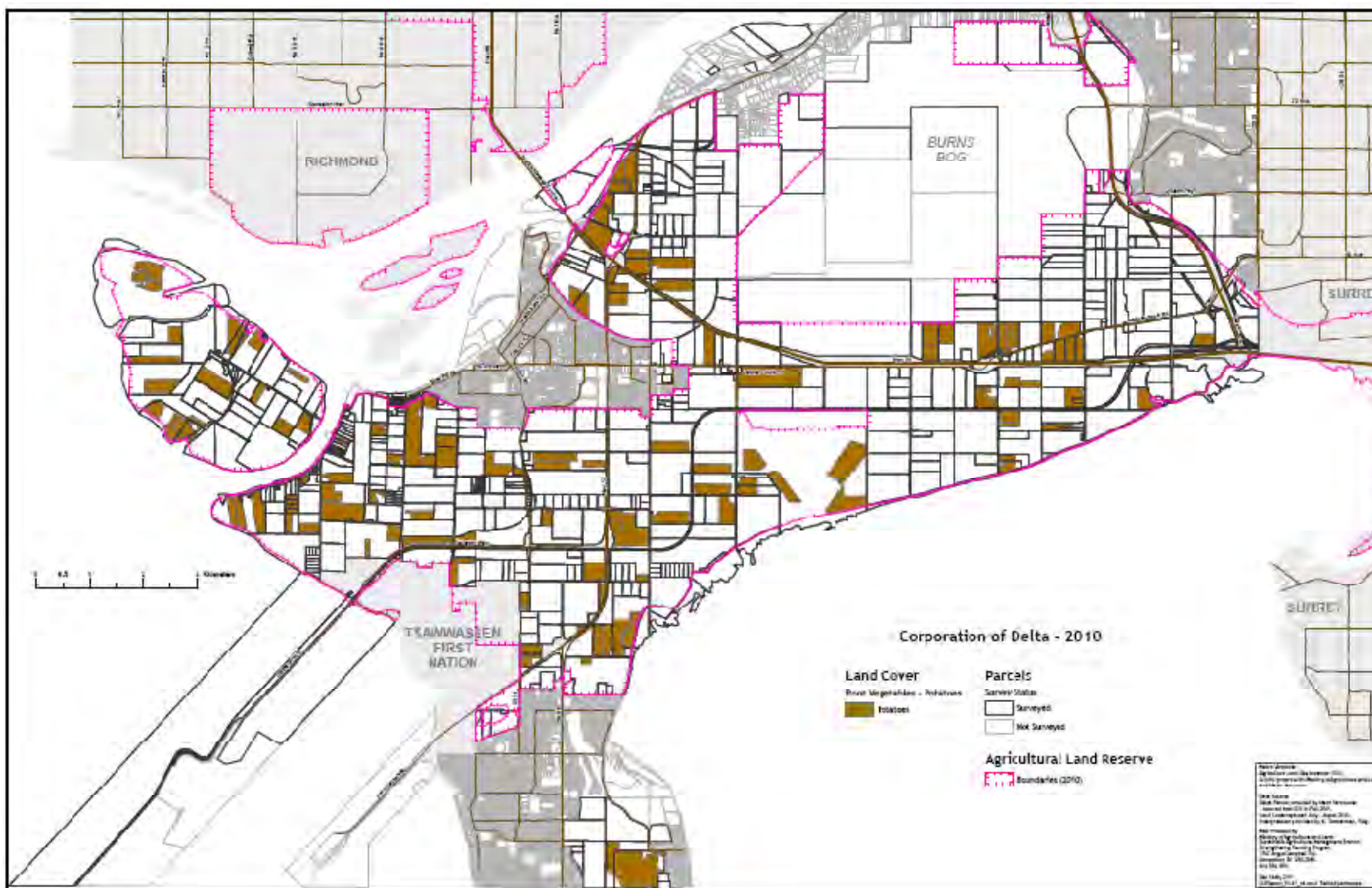


Figure 6-4: Distribution of Parcels in Potatoes, Delta, 2010
 (Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

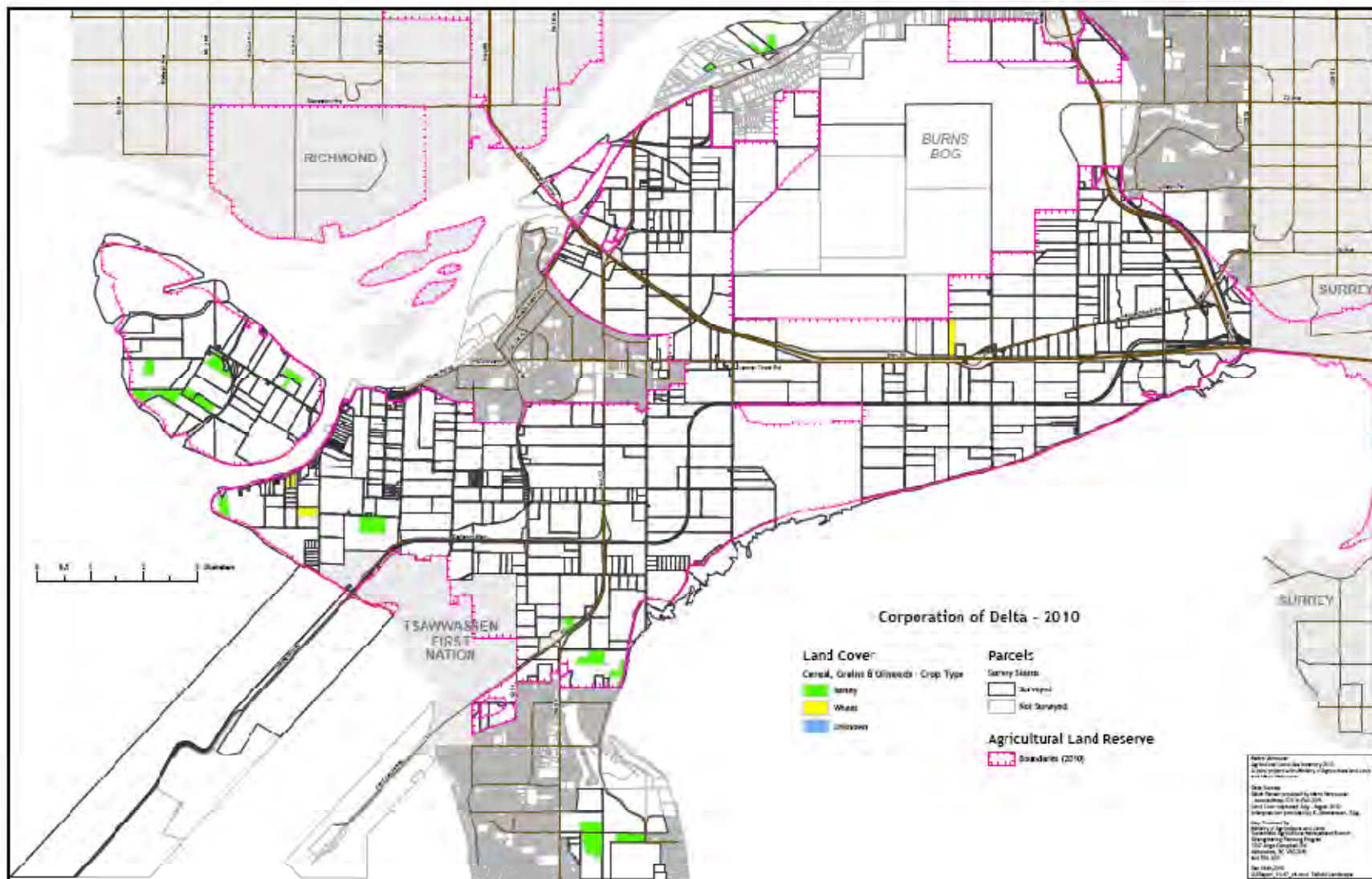


Figure 6-5: Distribution of Parcels with Cereal Grains, Delta, 2010

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

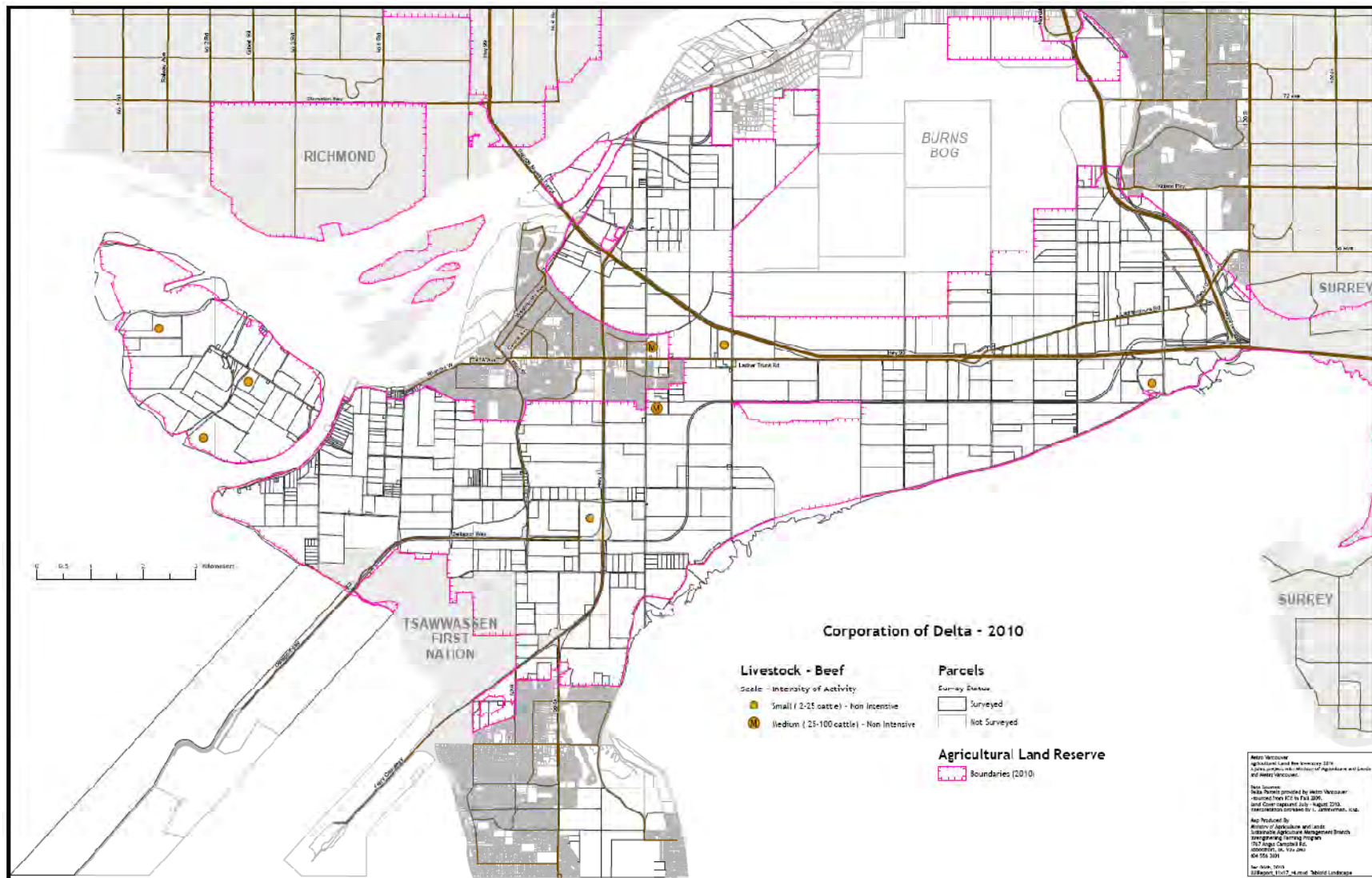


Figure 6-6: Distribution of Parcels with Beef, Delta, 2010
(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

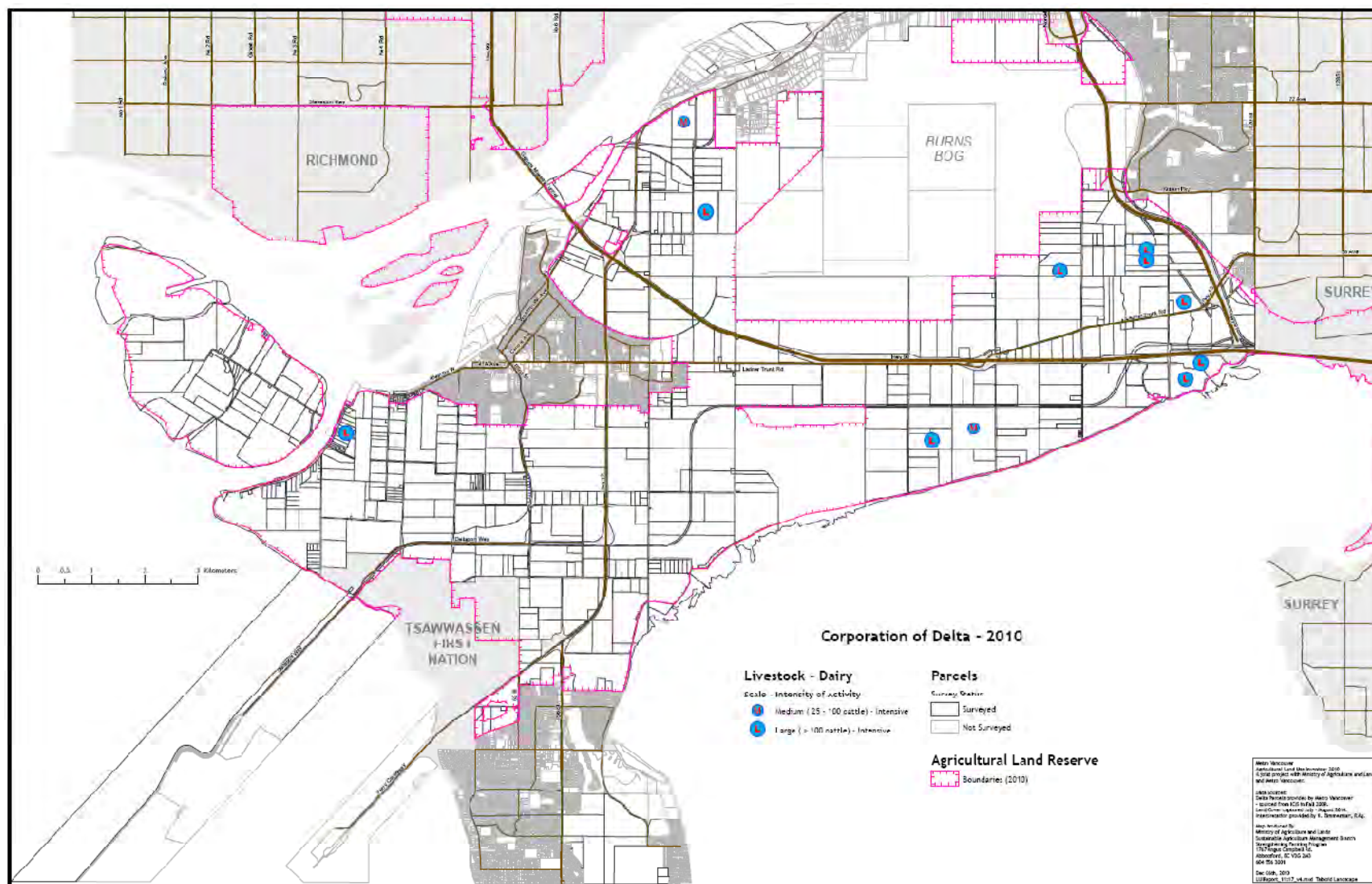


Figure 6-7: Distribution of Parcels with Dairy, Delta, 2010
 (Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

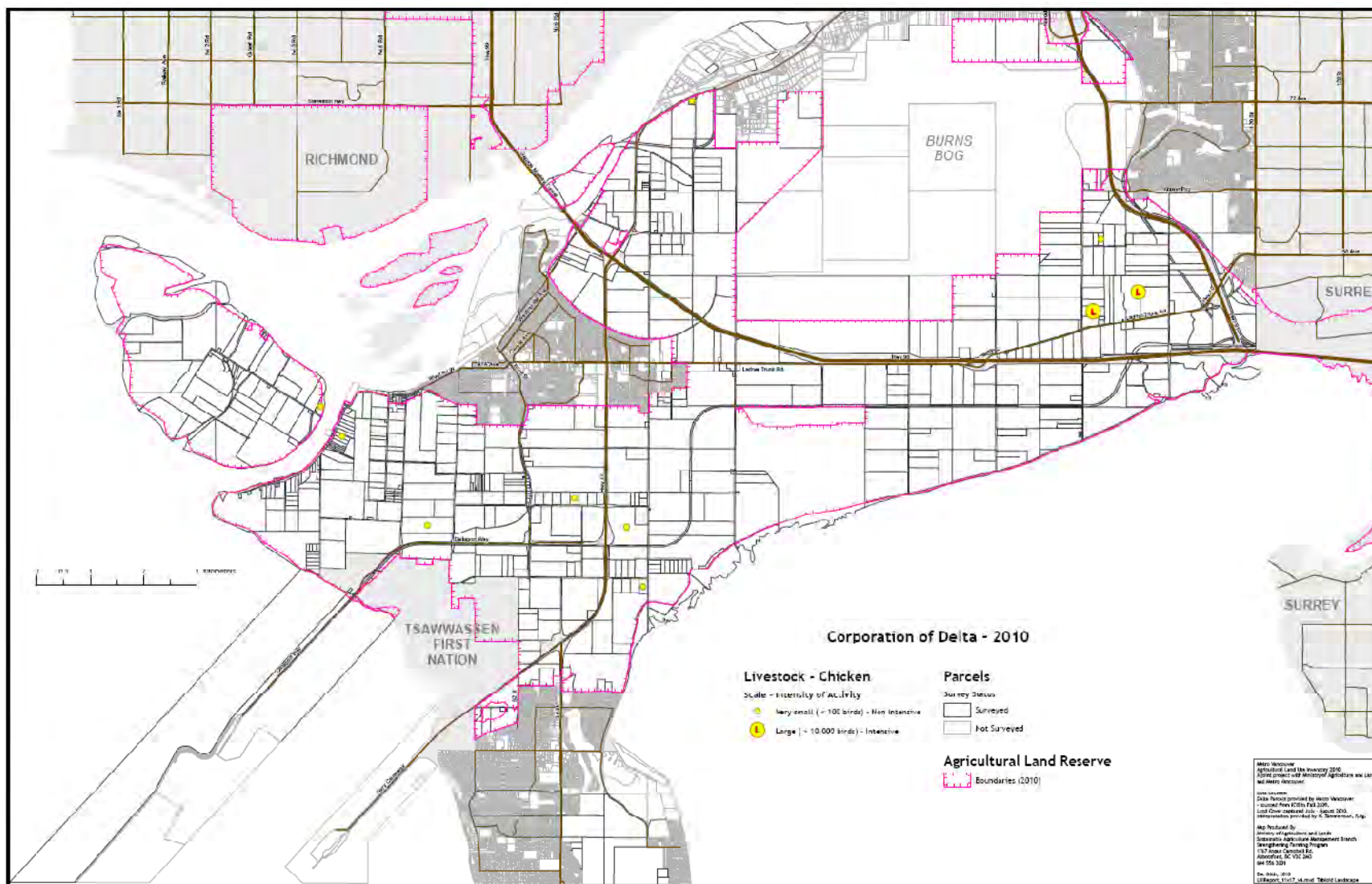


Figure 6-8: Distribution of Parcels with Chickens, Delta, 2010

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

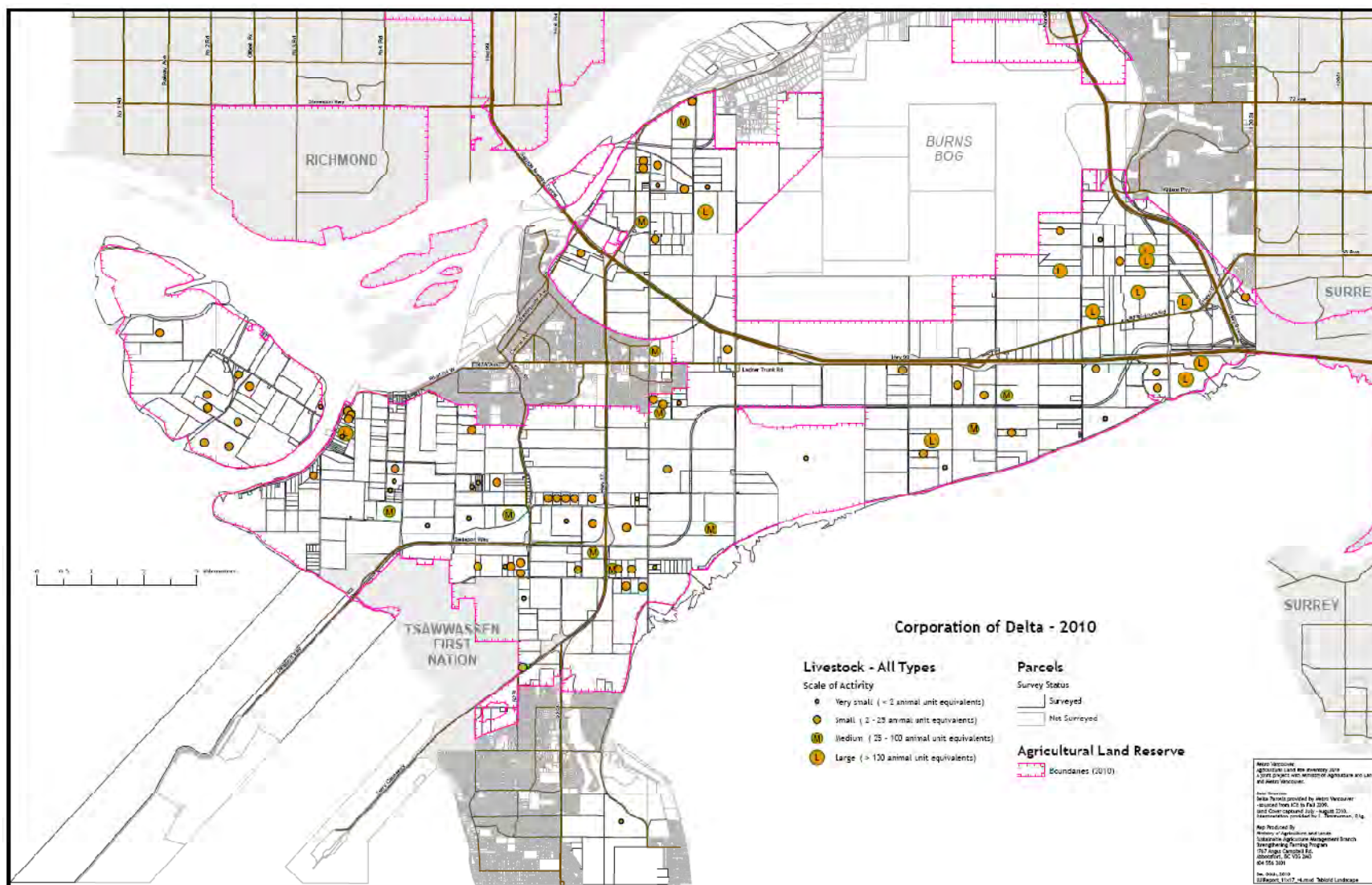


Figure 6-9: Distribution of Parcels with Horses, Delta, 2010
(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

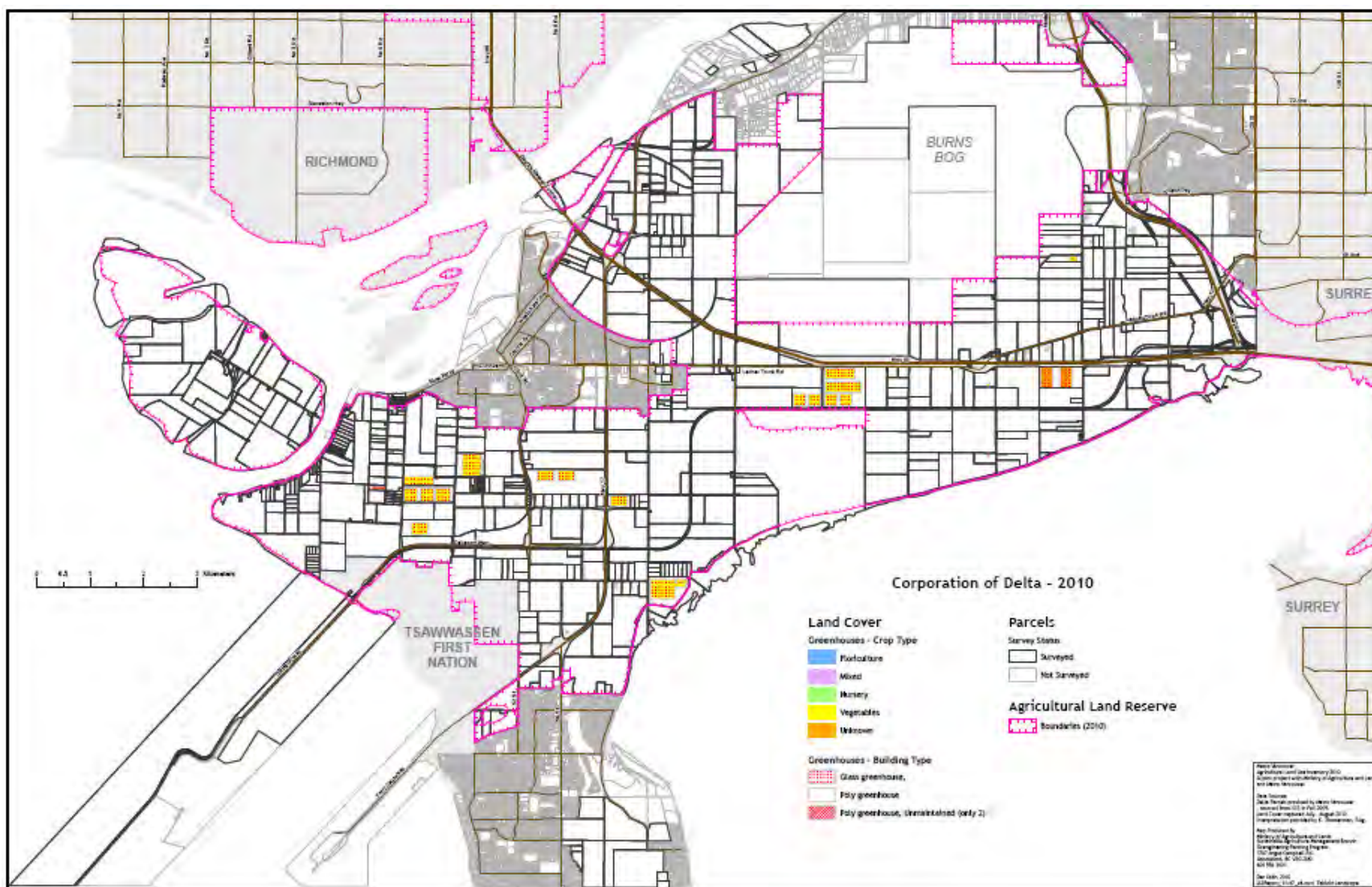


Figure 6-11: Distribution of Parcels in Greenhouse Production, Delta, 2010

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

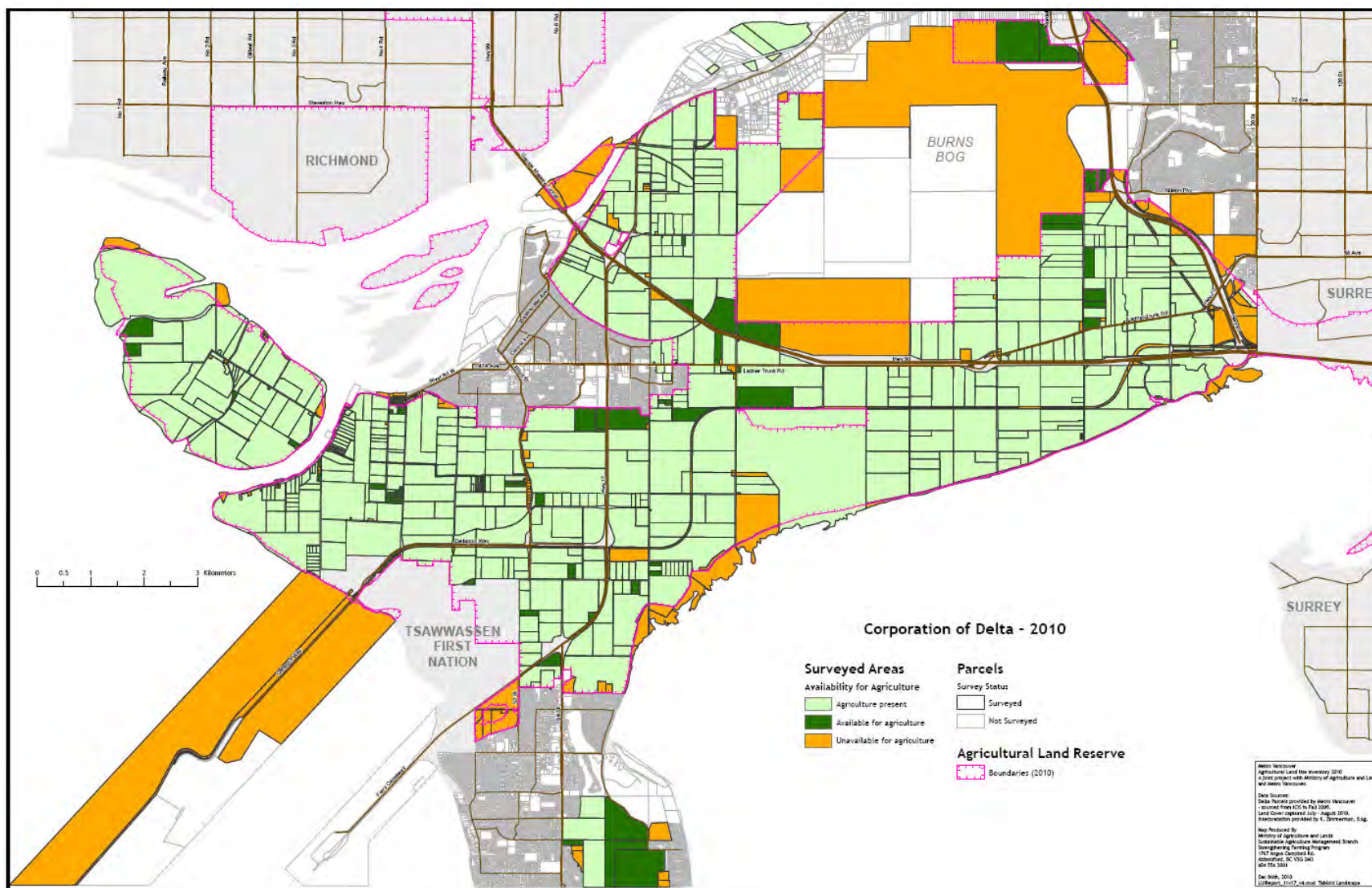


Figure 6-12: Distribution of Farmland Available for Agriculture, Delta, 2010

(Source: BCMAL. 2010. Delta Agricultural Land Use Inventory)

6.2 Agriculture Census Land Use 2005

6.2.1 Number of Census Farms

In 2005, there were 180 Census farms in Delta.¹⁴⁰ The number of farms in Delta has declined only 3% since 1995 (see Table 6-6). However, the number of farms less than 130 acres has increased about 5% while the number of farms larger than 130 acres has declined 23% in the period. Since area in crops has increased (see Table 6-9, below), this indicates that commercial farms have become larger at the same time that the number of small scale farmers has increased.

Table 6-6: Distribution of Farm Numbers by Farm Size in Delta, 1995 to 2005

Acres	1995	2000	2005	Change in Farm Numbers 1995 to 2005
# farms				
<10 ac	43	41	43	0.0%
10-69	66	84	77	16.7%
70-129	25	26	20	-20.0%
130-179	14	9	11	-21.4%
180-239	10	10	8	-20.0%
240-399	23	14	12	-47.8%
400-559	2	8	5	150.0%
560-759	1	2	0	-100.0%
760-1119	2	2	2	0.0%
1120-1599	0	0	1	
1600-2239	0	0	1	
2240-2879	0	0	0	
2880-3519	0	0	0	
3520+	0	0	0	
	186	196	180	-3.2%

Source: Statistics Canada. Agriculture Census, 1995, 2000, 2005

¹⁴⁰ A Census farm is defined as an agricultural operation that produces at least one of the following products intended for sale: crops, livestock, poultry, animal products, greenhouse or nursery products, Christmas trees, mushrooms, sod, honey or bees, and maple syrup products. Also includes: feedlots, greenhouses, mushroom houses and nurseries; farms producing Christmas trees, fur, game, sod, maple syrup or fruit and berries; beekeeping and poultry hatchery operations; operations with alternative livestock (bison, deer, elk, llamas, alpacas, wild boars, etc.) or alternative poultry (ostriches, emus, etc.), when the animal or derived products are intended for sale; backyard gardens if agricultural products are intended for sale; operations involved in boarding horses, riding stables and stables for housing and/or training horses even if no agriculture products are sold. Sales in the previous 12 months not required but there must be the intention to sell.

<http://www12.statcan.ca/english/census06/reference/dictionary/pop012.cfm>

6.2.2 Agricultural Land Use

Table 6-7 indicates that land in crops comprised about 84% of total farm area in Delta in 2005. The other categories are not significant. Land with greenhouses, which is represented in the “Not specified” category, probably amounts to about 123 ha (1.7%).

Table 6-7: Breakout of Farm Area by Type of Land Use, Delta, 2005

	2005 # of Farms	% of Farms	2005 # of Ha	% of Total Area
Land in crops	141	78.3%	6,303	83.8%
Summer fallow	2	1.1%	x(4)	
Tame seeded pasture (1)	25	13.9%	229	3.0%
Natural pasture (2)	42	23.3%	161	2.1%
Christmas trees, woodlands and wetlands	17	9.4%	x	
All other (3)	130	72.2%	x	
Greenhouse production area	26	14.4%	123	1.6%
Not specified			704	9.5%
Total Area of Farms	180		7,520	100.0%

Notes: (1) Tame and seeded pasture includes land that has been cultivated and seeded or drained, irrigated, fertilized or controlled for weeds or brush; (2) Natural pasture refers native pasture, native hay, rangeland, and grazeable bush; (3) All other includes idle land, land on which farm buildings, barnyards, lanes, home gardens, greenhouses and mushroom houses are located, woodlots, sugarbush, tree windbreaks, bogs, marshes, sloughs, etc.; (4) Notes: “x” = not reported for confidentiality reasons

Source: Statistics Canada. 2005. Agriculture Census

Figure 6-13 shows changes in land use in Delta between 1995 and 2005. Over the period, the area of land in crops has risen while the area in tame seeded pasture and natural pasture has declined.

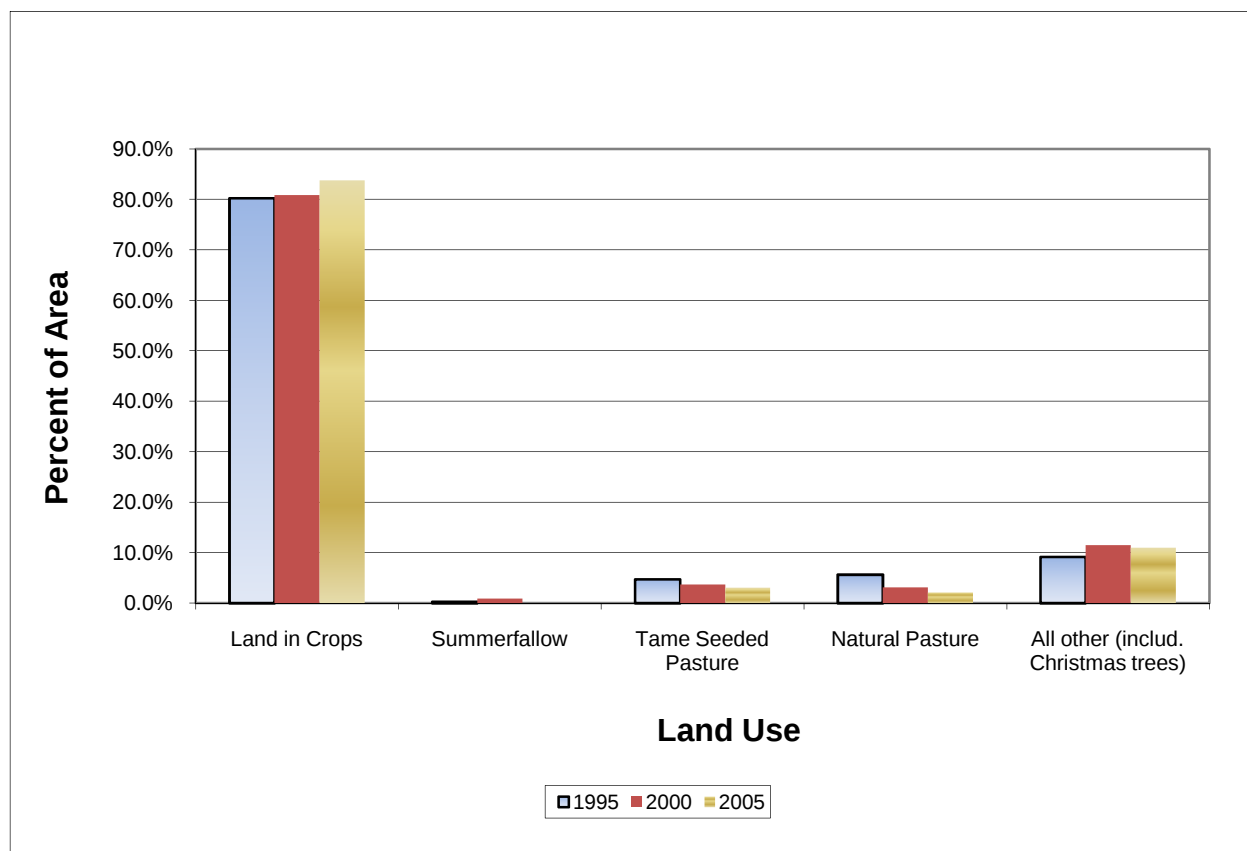


Figure 6-13: Change in Agricultural Land Use, Delta, 1995 to 2005

6.2.3 Land in Crops

Table 6-8 presents the breakout of horticultural activities in Delta in 2005. Crops comprise about 84% of the land base. Major crop types consist of vegetables (28% of land in crops), potatoes (26%), and tame hay (24%). In terms of number of farms having crops, 43% of farms reported tame hay, followed by vegetables (36%), tree fruit, berry and nuts (29%), and potatoes (18%).

Table 6-8 also indicates that 22% of the farms do not have any land in crops. These farms are predominantly in tame seeded pasture and natural pasture. If hay crops are combined with pasture land, the total land base occupied by these uses represents about 25% of the farm land base in Delta (Table 6-9).

Between 1995 and 2005, the areas of greenhouses quadrupled and nursery crops, although of small acreage, more than doubled. Berry, vegetables and potatoes increased in the period (see Figure 6-14 and Table 6-9). Areas of cereal grains declined.

Table 6-8: Breakout of Cropping Activities in Delta, 2005

	# of Farms	% of Farms with Crops	# of Hectares	% of Land in Crops	% of Total Farm Area
Total Land in Crops	141	100.0%	6,303	100.0%	83.8%
All grains	x	x	352	5.6%	4.7%
Wheat	3	2.1%	22	0.3%	0.3%
Oats	8	5.7%	83	1.3%	1.1%
Barley	9	6.4%	247	3.9%	3.3%
Potatoes	26	18.4%	1,660	26.3%	22.1%
Corn for silage	9	6.4%	x	x	x
Alfalfa/alfalfa mixtures	3	2.1%	x	x	x
All other tame hay	60	42.6%	1,445	22.9%	19.2%
Tree fruits, berries and nuts	41	29.1%	678	10.8%	9.0%
Vegetables	51	36.2%	1,755	27.8%	23.3%
Nursery	15	10.6%	37	0.6%	0.5%
All other	x		376	6.0%	5.0%

Notes: "x" = not reported for confidentiality reasons

Source: Statistics Canada. Agriculture Census 2005

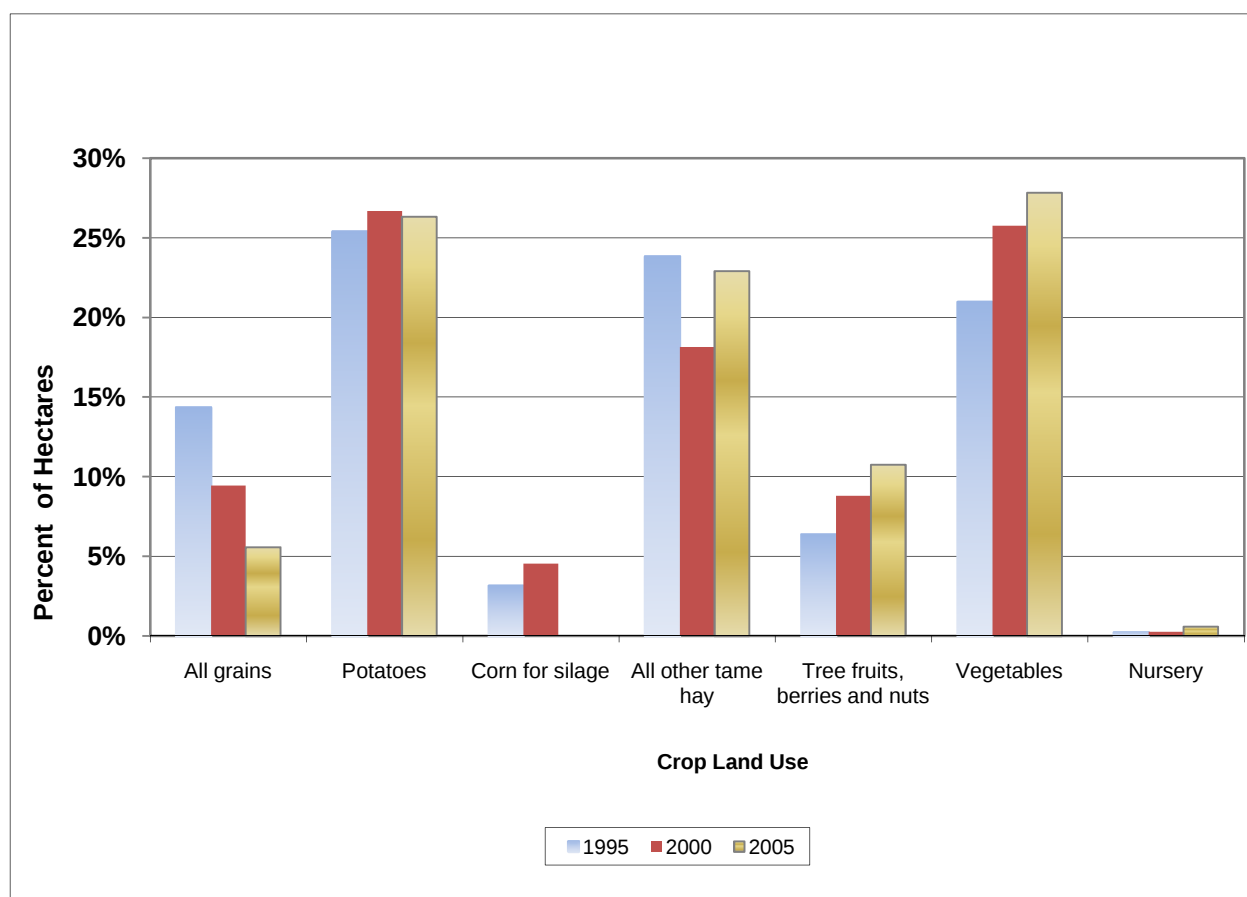
**Figure 6-14: Change in Crops, Delta, 1995 to 2005**

Table 6-9: Change in Agricultural Land Use and Cropping Activities, Delta, 1995, 2000 and 2005

	1995	2000	2005	Percent Change 1995 to 2005	1995	2000	2005	Percent Change 1995 to 2005	Percent of Total Area of Farms 2005
	Number of Farms				Number of Hectares			Percent	
All cereal grains					869	599	352	-59.5%	4.7%
Potatoes	37	32	26	-29.7%	1,538	1,692	1,660	7.9%	22.1%
Corn for silage	12	12	9	-25.0%	191	287	x(2)	x	x
Alfalfa & mixtures	5	8	3	-40.0%	107	133	x	x	x
All other tame hay	79	62	60	-24.1%	1,443	1,150	1,445	0.1%	19.2%
Tree fruits, berries & tree nuts	x	37	41	x	386	558	678	75.6%	9.0%
Vegetables	50	50	51	2.0%	1,270	1,633	1,755	38.2%	23.3%
Nursery	12	19	15	25.0%	14	16	37	164.3%	0.5%
GH (1) area (ha)	19	32	26	36.8%	31	117	123	299.6%	x
Total area of farms	186	196	180	-3.2%	7,544	7,840	7,520	-0.3%	100.0%
Land in Crops	155	152	141	-9.0%	6,053	6,340	6,303	4.1%	83.8%
Summer fallow	4	9	2	-50.0%	20	68	x	x	x
Tame Seeded Pasture	29	38	25	-13.8%	355	289	229	-35.5%	3.0%
Natural Pasture	50	53	42	-16.0%	426	242	161	-62.2%	2.1%
All other (including Christmas trees)	137	140	130	-5.1%	690	900	x	x	x
Christmas trees, woodlands and wetlands	--	--	17	x	--	--	x	x	x
All other	--	--	127	x	--	--	827	x	11.0%

Notes: (1) GH = Greenhouse, total space available – vegetables, floriculture, and other GH; (2) “x” = not reported for confidentiality reasons..

Source: Statistics Canada Agriculture Census. 1995, 2000, 2005

Covered crop operations are extremely significant in terms of production and revenues. Table 6-8 indicates that the area of all greenhouse (GH) crops increased by 300% between 1995 and 2005. Statistics Canada data underestimates the total GH sector by at least 17%, with GH vegetables alone amounting to 137 ha in 2005. GH vegetable area has increased by only 7 ha in area since 2005 (i.e., 144 ha in 2010).¹⁴¹

Table 6-9, above, indicates that tree fruit/berry area has increased 76% between 1995 and 2005. Figure 6-15 presents the trends in areas of selected berries in the 1995 to 2005 period. The increase in the berry category is attributable to expanded area of blueberries and cranberries. Strawberry area has fluctuated in the period.

Table 6-10 presents a breakout of crop acreage by selected berries and field vegetables. In 2005, blueberries represented about 53% of the area planted fruits, berries and nuts, followed by cranberries (32%) and strawberries (12.5%).

Table 6-10: Crop Area of Selected Vegetable and Berry Crops, Delta, 1995, 2000 and 2005

Crop	1995	2000	2005	1995	2000	2005	% Change 1995 to 2005	% of Area in 2005
	# farms			# acres				
Strawberries	12	10	8	64	105	85	32.8%	12.5%
Raspberries	x	7	3	x	10	8	x	1.2%
Blueberries	15	20	25	159	208	360	126.4%	53.1%
Cranberries	3	6	7	x	189	216	x	31.9%
Other	x	x	x	x	46	9	x	1.3%
Total fruit/berries & nuts	x	37	41	386	558	678	75.6%	100.0%
Sweet corn	22	22	18	223	346	341	52.9%	19.4%
Cucumbers	5	8	4	8	11	9	12.5%	0.5%
Green peas	14	16	16	289	238	253	-12.5%	14.4%
Green or wax beans	20	28	24	412	565	769	86.7%	43.8%
Cabbage	9	6	8	109	119	42	-61.5%	2.4%
Chinese cabbage	3	5	6	x	17	35	x	2.0%
Broccoli	6	8	1	10	59	x	x	x
Carrots	6	8	4	6	17	x	x	x
Turnips/rutabagas	8	8	4	33	40	44	33.3%	2.5%
Dry onions	4	4	4	19	x	1	-94.7%	0.1%
Lettuces	4	3	3	1	x	19	1800.0%	1.1%
Spinach	4	4	4	1	2	3	200.0%	0.2%
Pumpkin/squash/zucchini	14	18	14	66	141	121	83.3%	6.9%
Other vegetables	12	8	10	39	39	49	25.6%	2.8%
Total vegetables	50	50	51	1270	1633	1755	38.2%	100.0%

Notes: "x" = not reported for confidentiality reasons.

Source: Statistics Canada. Agriculture Census 1995, 2000, 2005

¹⁴¹ BC Vegetable Marketing Commission.

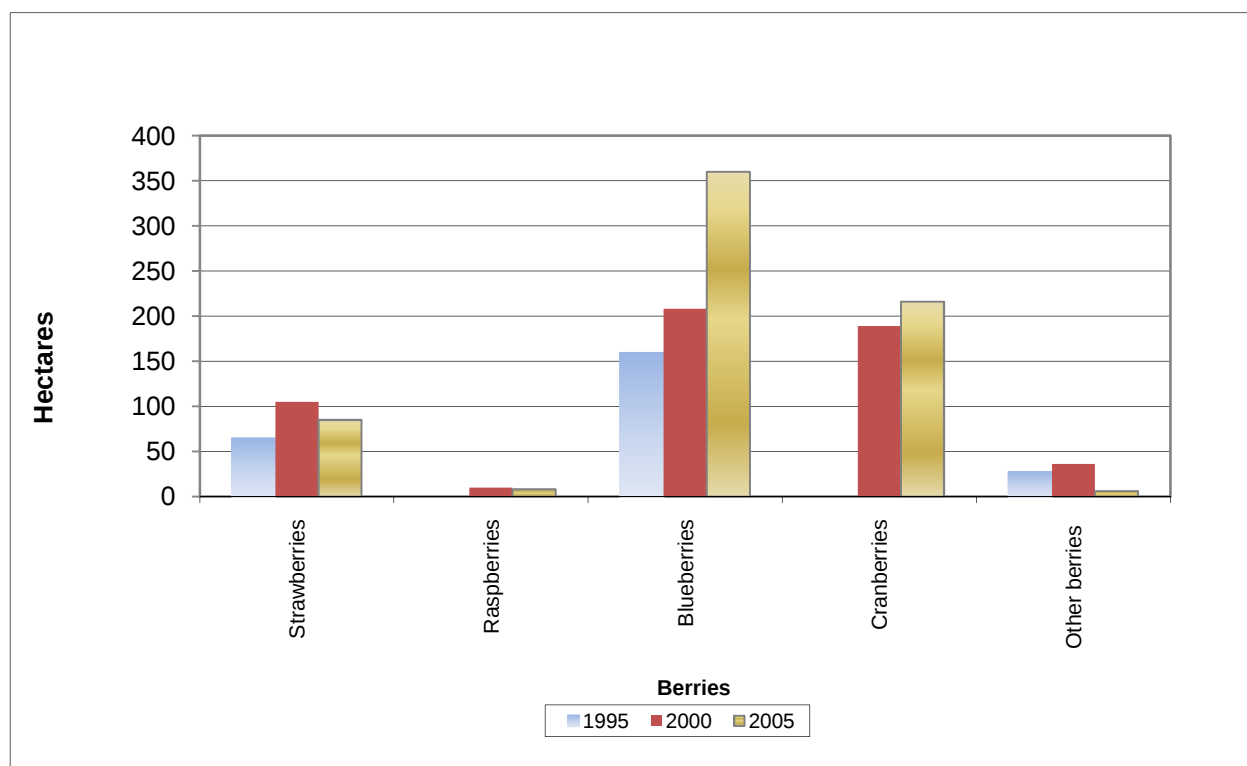


Figure 6-15: Change in Area Cropped in Selected Berries, Delta, 1995 to 2005

Field vegetable crop area has increased by 58% in the 1995 to 2005 period (Table 6-10). Areas of sweet corn, green peas, green/wax beans, cabbage and squash/pumpkin/zucchini are the most substantial vegetable crops grown in Delta. Area of green/wax bean showed the largest increase in the period. Many crops declined in area over the period. Figure 6-16 presents the changes in the period graphically.

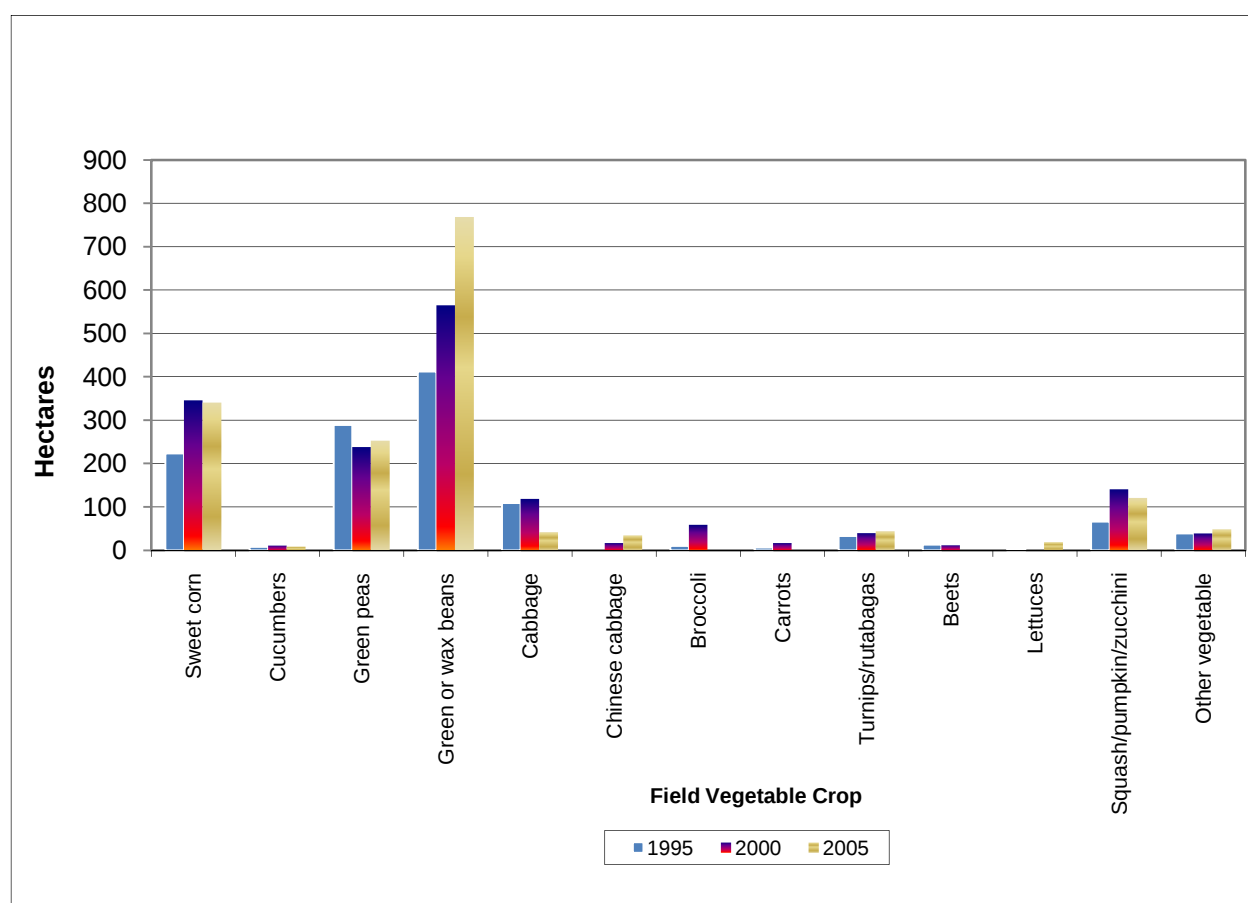


Figure 6-16: Change in Area Cropped in Selected Field Vegetables, Delta, 1995 to 2005

6.2.4 Livestock Operations

In 1995, commercial livestock operations in Delta consisted primarily of dairy operations. In terms of numbers, dairy cattle outnumbered beef cattle, horses and sheep on Census farms. Of the livestock, horses are held by the largest proportion of farms and chickens, mostly small flocks, are kept on about 12% of farms.

Table 6-11 indicates that the numbers of livestock operations, with the exception of bee keepers, goats and poultry, have declined significantly. Between 1995 and 2005, the number of Census farms having cattle (beef and dairy) and sheep and lambs declined by at least 35%. In 2005, commercial turkey production has left the municipality.

Livestock inventories of cattle and sheep declined in the period. Goat numbers, although low, increased significantly. Figure 6-17 shows the changes in numbers in the respective categories indexed to 1995.

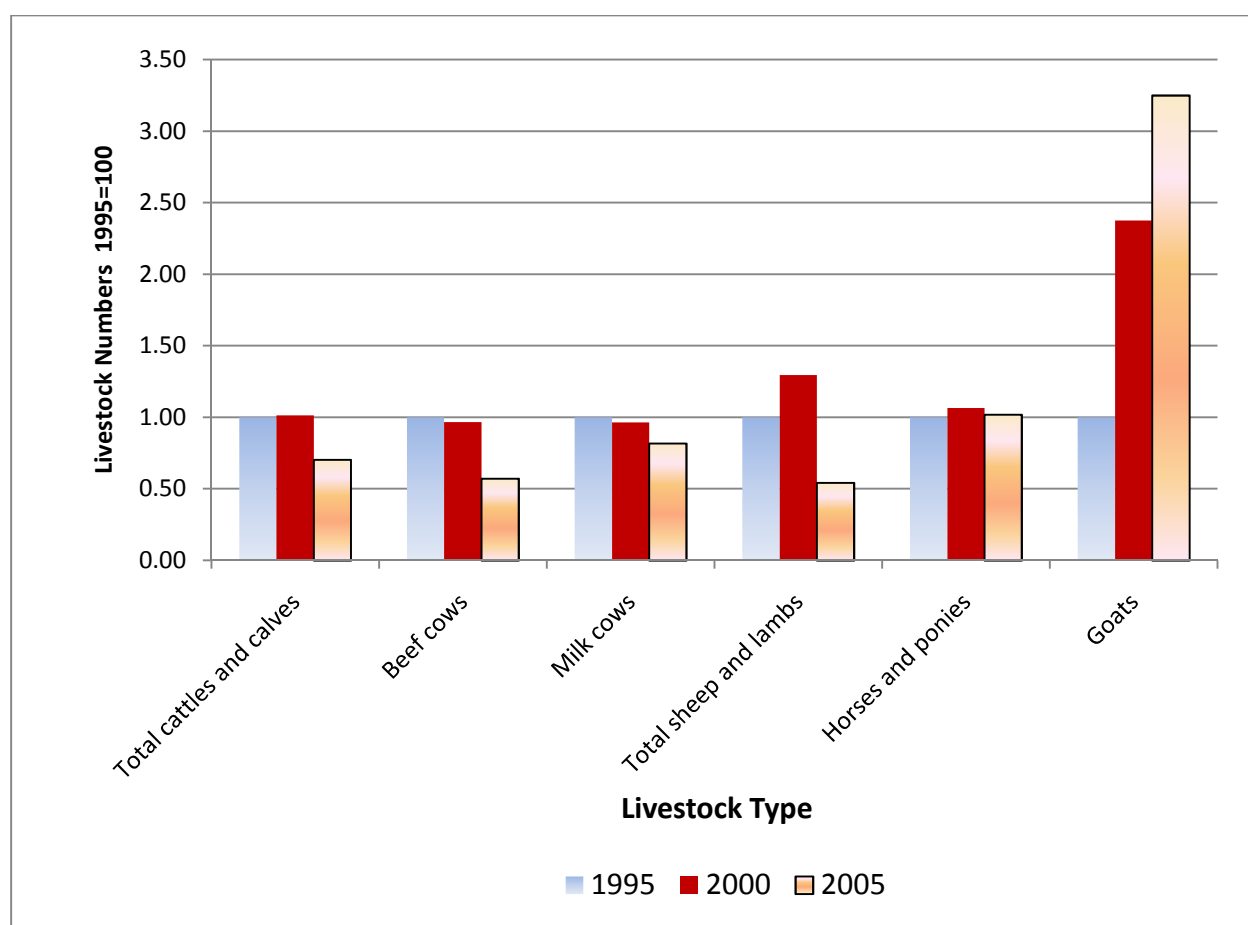


Figure 6-17: Change in Livestock Inventory, Delta, 1995 to 2005, Indexed to 1995

Table 6-11: Livestock Farming Activities, Delta, 1995 to 2005

	1995	2000 # of farms	2005	Change 1995- 2005	1995	2000 # animals	2005	Change 1995- 2005
Total hens/chickens	20	33	22	10.0%	x	x	x	x
Turkeys	0	2	0	x	0	x	0	
Other poultry	4	12	5	25.0%	x	1,474	x	x
Total cattle and calves	48	34	24	-50.0%	4,549	4,607	3201	-29.6%
Beef cows	25	19	11	-56.0%	479	463	274	-42.8%
Dairy cows	20	14	10	-50.0%	1660	1599	1357	-18.3%
Total pigs	1	0	1	0.0%	x	0	x	x
Total sheep and lambs	14	15	9	-35.7%	791	1,024	429	-45.8%
Horses and ponies	52	55	44	-15.4%	588	626	599	1.9%
Goats	4	9	6	50.0%	8	19	26	225.0%
Llamas/alpacas	3	10	3	0.0%	x	62	7	x
Other livestock								
Bees for honey (hives)	2	3	7	250.0%	x	x	120	x
Broiler, Cornish & roaster production (lbs)	2	4	2	0.0%	x	x	x	x
Turkey production (lbs)	1	1	0	-100.0%	x	x	0	-100.0%

Notes: "x" = not reported for confidentiality reasons.

Source: Statistics Canada. Agriculture Census

6.2.5 Organic Farming

Delta has developed a natural/organic sector that focuses primarily on the marketing of local organic production commercially and through direct marketing channels, particularly farm market sales.

The range of organic products grown and/or processed in Delta includes primarily field fruits and vegetables and hay (Table 6-12). The number of organic operations has increased since 2005.

Table 6-12: Delta Organic Production, Number of Operators, 2000 and 2005

	2000	2005
	# Farms	# Farms
All farms producing certified organic	5	8
Organic hay or field crops	4	2
Organic vegetables, fruit, GH	3	7
Organic animals or animal products	0	0
Other organic products	0	0

Table 6-13 indicates that 26 Delta Census farms produced organic products, of which about 62% were uncertified, representing almost 15% of all farms in Delta. About half the field fruit and vegetable operations are uncertified and several farms are producing uncertified organic animals and animal products.

Table 6-13: Certification Status of Operations Producing Organic Products, Delta, 2005

	Hay or Field crops	Fruits, Vegetables & Greenhouse Crops	Animals & Animal Products	Other Organic Products	Total Number of Farms	Percent of Farms
	Number of Farms					
Certified organic products	2	7	0	0	8	30.8%
Transitional organic products	1	2	0	0	3	11.5%
Uncertified organic products	3	8	6	0	16	61.5%
Reporting a least one certification status	6	16	6	0	26	100.0%

Source: Statistics Canada. 2005. Agriculture Census

6.2.6 Farm Size

In 2005, about 24% of Delta farms were less than 4 ha (10 ac) in size and 33% of farms (60 farms) were 70 acres in size, or larger.¹⁴² Census farm size in Delta averaged about 42 acres in 2005, almost identical to 1995. The proportion of small farms less than 70 acres in size has increased in part due to the consolidation of medium sized farms (see Figure 6-18). Most of the decrease in farm numbers between 1995 and 2005 has been in the category of operations between 240 and 399 ac in size (see Table 6-14).

¹⁴² This represents the total farm, including non-farmed area.

Table 6-14: Distribution of Farm Size in Delta, 1995 to 2005

Acres	1995	2000	2005	Percent 2005	Cumulative Percent 2005	Reverse Cumulative Percent 2005
<10 ac	43	41	43	23.9%	23.9%	100.0%
10-69	66	84	77	42.8%	66.7%	76.1%
70-129	25	26	20	11.1%	77.8%	33.3%
130-179	14	9	11	6.1%	83.9%	22.2%
180-239	10	10	8	4.4%	88.3%	16.1%
240-399	23	14	12	6.7%	95.0%	11.7%
400-559	2	8	5	2.8%	97.8%	5.0%
560-759	1	2	0	0.0%	97.8%	2.2%
760-1119	2	2	2	1.1%	98.9%	2.2%
1120-1599	0	0	1	0.6%	99.4%	1.1%
1600-2239	0	0	1	0.6%	100.0%	0.6%
Total farms	186	196	180	100.0%		

Source: Statistics Canada. Agriculture Census. 1995, 2000, 2005

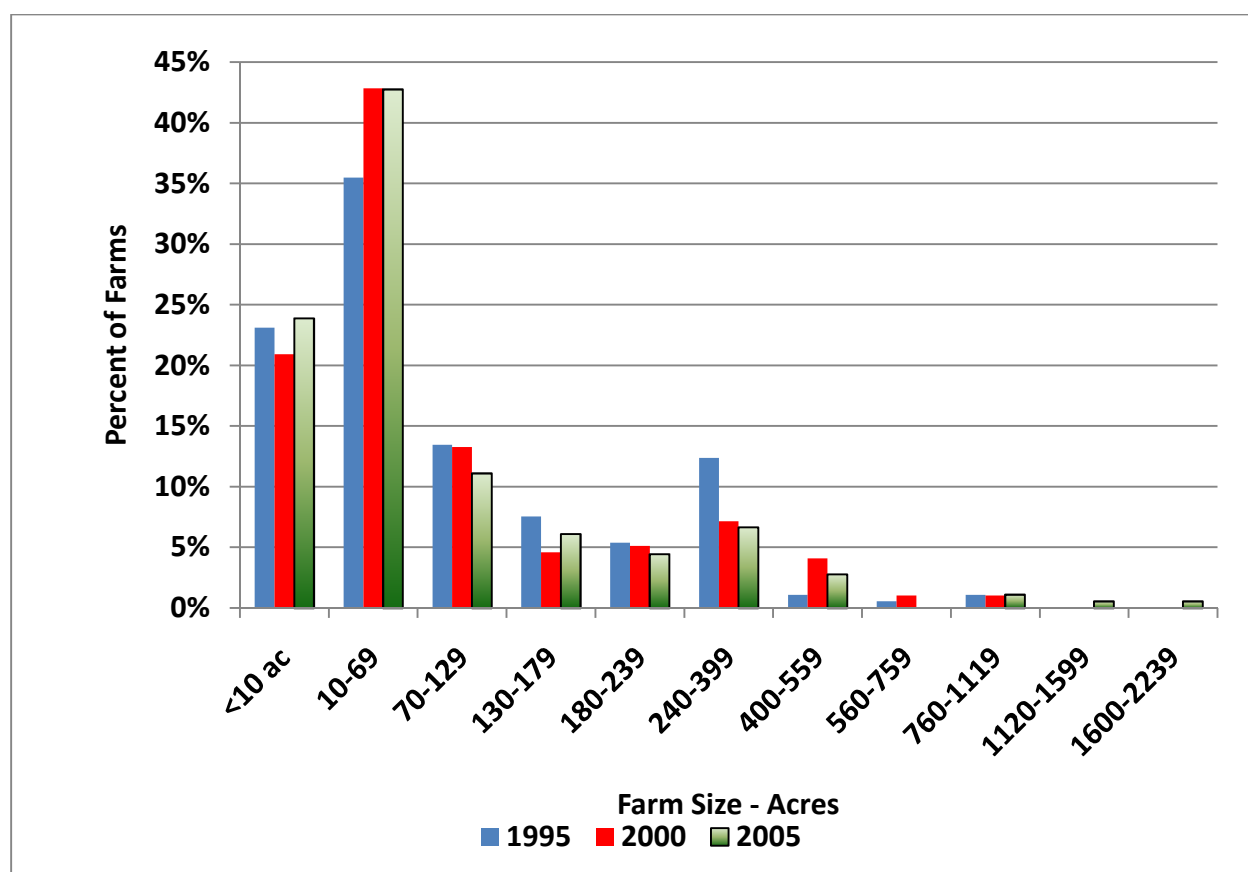
**Figure 6-18: Distribution of Farms by Farm Size, Delta, 1995 to 2005**

Figure 6-19 compares the distribution of farm size in Delta, the Lower Mainland and BC. Relative to BC, Delta shows a relatively lower proportion of farms less than 10 acres in size and a comparable proportion of farms in the range between 70 acres and 599 acres. Relative to the Lower Mainland, Delta shows a comparable proportion of farms in the 10 to 69 acre category but, otherwise, a lower percentage of small farms less than 10 acres and a higher percentage of farms over 70 acres.

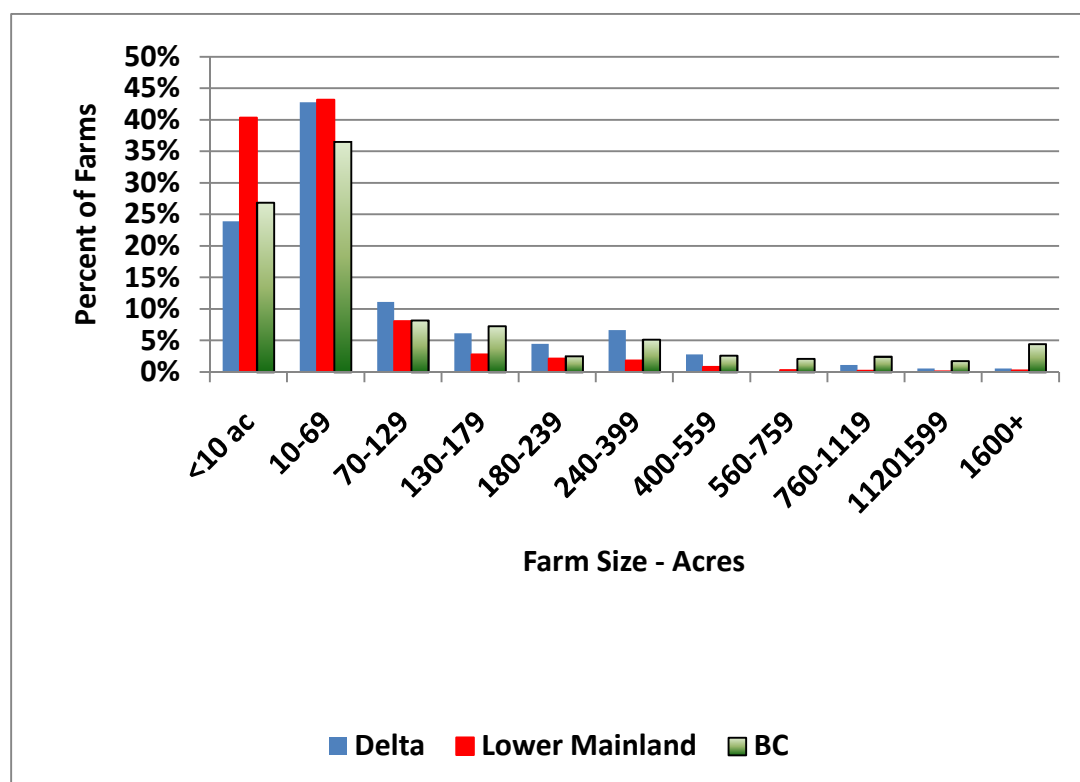


Figure 6-19: Comparison of the Distribution of Farms by Farm Size: Delta, Lower Mainland, and BC, 2005

6.2.7 Agricultural Land Tenure

Approximately 48% of the Delta farm area was owned by farm operators in 2005 (see Table 6-15), representing an increase since 1995. Between 1995 and 2005, the number of acres being leased by farm operators decreased 11% to represent about 52% of the land farmed in Delta in 2005.

Table 6-15: Agricultural Land Tenure in Delta, 1995 to 2005

	1995			2000			2005			Percent Change 1995- 2005
	# Farms	Ha	Percent 1995 Ha	# Farms	Ha	Percent 2000 Ha	# Farms	Ha	Percent 2005 Ha	Ha
Total farm area	186	7,544	100.0%	196	7,830	100.0%	180	7,520	100.0%	-0.3%
Area owned	148	3,144	41.7%	160	3,559	45.5%	159	3,600 est	47.9%	14.5%
Area leased from government	49	1,714	22.7%	39	1,277	16.3%	24	981	13.0%	-42.8%
Area rented leased from others	72	2,686	35.6%	73	2,529	32.3%	62	2,940 est	39.1%	9.4%
Area crop-shared from others	x	x	x	14	475	6.1%	0	0	x	x
Land used under another arrangement	x	x	x	x	x	x	6	46	0.6%	x
Total area leased/rented	121	4,400	58.3%	34	2,116	27.0%	180	3,920	52.1%	-10.9%

Notes: "x" = not reported for confidentiality reasons.

Source: Statistics Canada. Agriculture Census. 1995, 2000, 2005

6.2.8 Farm Operating Arrangements

In 2005, about 44% of Delta's farming operations were run as sole proprietorships, followed with 36% of farms operated as family corporations. Partnerships without agreements represent about 12% of the farms, almost doubling in the 1995 to 2005 period. Besides a decrease in the proportion of partnerships with agreement, there has been an increase in family and non-family corporations (see Table 6-16).

Table 6-16: Farm Operating Arrangements on Delta Farms, 1995 to 2005

Operating Arrangement	1995		2000		2005		Percent Change 1995 to 2005
	# Farms	Percent	# Farms	Percent	# Farms	Percent	
Sole proprietorship	81	43.5%	86	43.9%	80	44.4%	-1.2%
Partnerships – no agreement	8	4.3%	27	13.8%	22	12.2%	175.0%
Partnership – with agreement	33	17.7%	17	8.7%	5	2.8%	-84.8%
Family corporation	56	30.1%	57	29.1%	64	35.6%	14.3%
Non-family corporation	7	3.8%	8	4.1%	9	5.0%	28.6%
Other (institutional)	1	0.5%	1	0.5%	0	0.0%	-100.0%
Total	186	100%	196	100%	180	100%	

Source: Statistics Canada. Agriculture Census. 1995, 2000, 2005

6.2.9 Farm Capital Investment Categories

Over the 1995 to 2005 period, the proportion of farms in the higher farm capital categories has increased significantly (see Table 6-17). Farms with capital assets exceeding \$1 million comprised about 72% of Census farms in 2005, compared to 45% in 1995. Almost 31% of these farms had investments exceeding \$3.5 million (see Figure 6-18). In 2005, 24% of farm operations had capital assets under \$500,000, while the mean value of farm capital assets was about \$4.87 million per Census farm.

Table 6-17: Farm Numbers by Farm Capital Category, Delta, 1995 to 2005

Farm Capital Category (\$)	1995	2000	2005	Percent of Farms in Category (1995)	Percent of Farms in Category (2005)	Percent of Delta Farms (cumulative) 2005
	Number of Farms					
<\$50,000	1	3	4	2.7%	2.2%	2.2%
\$50,000-99,999	4	4				
\$100,000-199,999	11	12	5	5.9%	2.8%	5.0%
\$200,000-349,999	16	14	3	8.6%	1.7%	6.7%
\$350,000-499,999	17	18	6	9.1%	3.3%	10.0%
\$500,000-999,999	53	44	32	28.5%	17.8%	27.8%
\$1,000,000-1,499,999	30	33	28	16.1%	15.6%	43.3%
\$1,500,000-1,999,999	54	8	14	29.0%	7.8%	51.1%
\$2,000,000-3,499,999		60	33		18.3%	69.4%
\$3,500,000+			55		30.6%	100.0%
Total # of Farms	186	196	180			

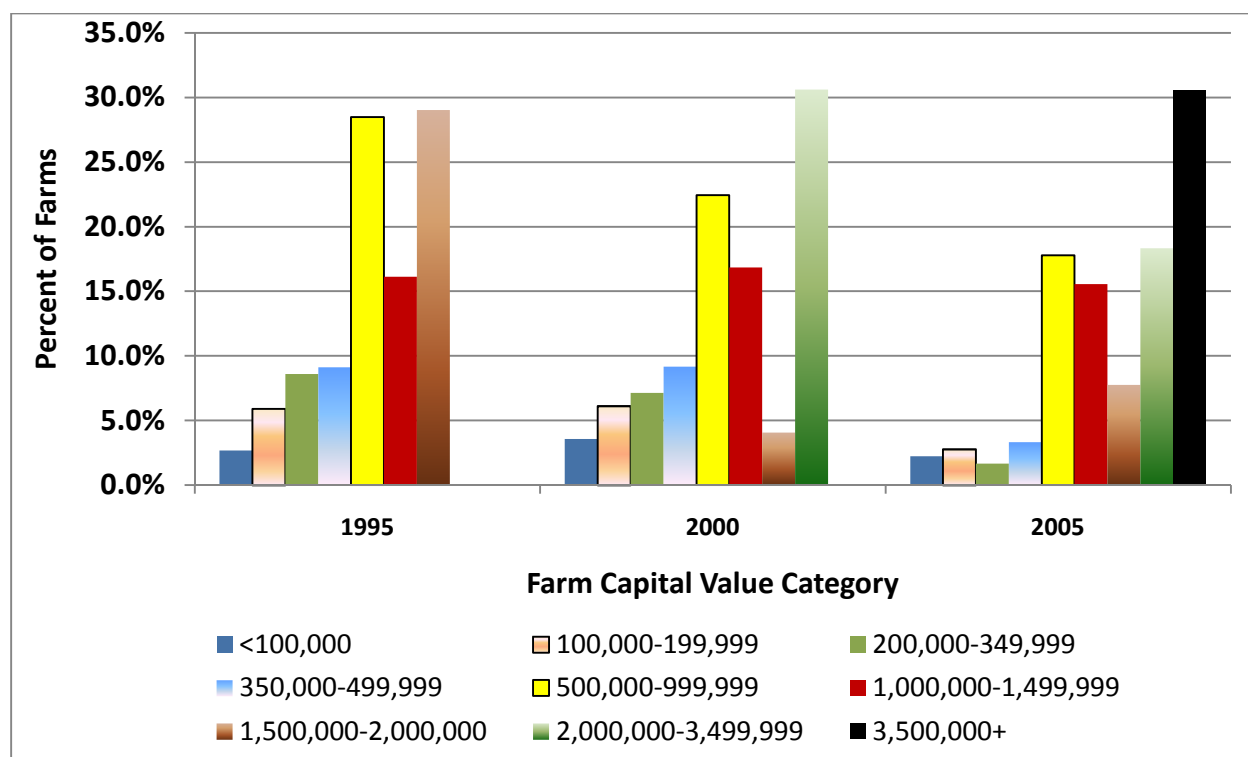


Figure 6-20: Distribution of Farms by Farm Capital Value Category, Delta, 1995 to 2005

Delta's farm capital assets totalled about \$876 million in 2005, increasing 209% overall between 1995 and 2005, but not as rapidly as the value of land and buildings (see Table 6-18). Table 6-18 also shows the declining livestock inventory associated with the loss of dairy, poultry and other livestock production in Delta.

Table 6-18: Breakout of Total Farm Capital by Asset Category, Delta, 1995 to 2005

	1995	2000	2005	Percent Change 1995-2005	Capital Category as Percent of Total Farm Capital 2005
	Year				
Average Farm Capital/Farm	\$1,522,501	\$2,814,111	\$4,867,541	219.7%	
Machinery & equipment	\$35,930,203	\$57,511,537	\$54,070,267	50.5%	6.2%
Livestock Inventory	\$5,646,216	\$7,846,060	\$3,865,090	-31.5%	0.4%
Land & buildings	\$241,608,851	\$486,208,070	\$818,222,048	238.7%	93.4%
Total Farm Capital	\$283,185,270	\$551,565,667	\$876,157,405	209.4%	100.0%
Source: Statistics Canada. Agriculture Census. 1995, 2000, 2005.					

Land and buildings comprised over 93% of the total farm value and represents among the highest ratios for land-to-total assets in farming in Canada (see Figure 6-21).

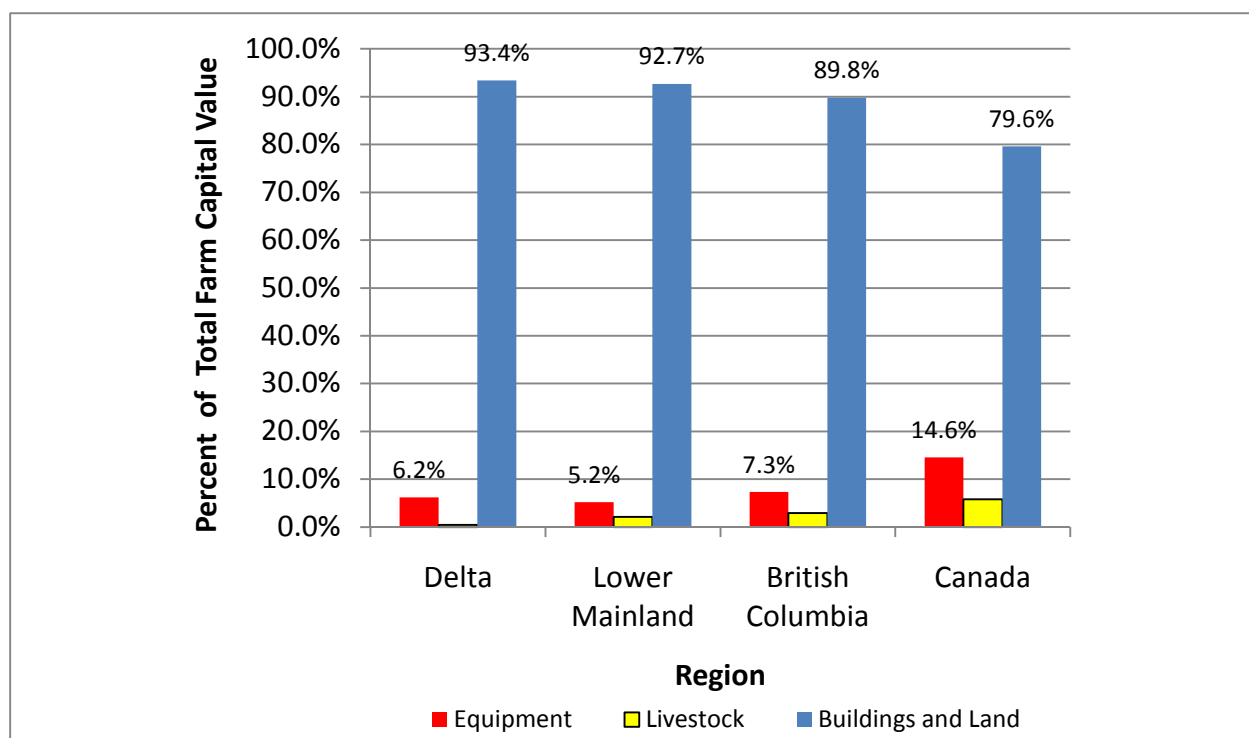


Figure 6-21: Comparison of the Distribution of Farm Asset Value, Delta, Lower Mainland, BC and Canada, 2005

A comparison of the farm capital distribution of Delta with the Lower Mainland and BC (Figure 6-22) reveals the high magnitude of capital investment in agriculture in Delta. In comparison to Delta's 72% of farms exceeding the \$1 million capital investment level, the comparable numbers for the Lower Mainland and BC are 51% and 33%, respectively. The dominance of Delta farms in the upper capital investment categories is strongly influenced by the presence of the greenhouse sector, and in particular, GH vegetables.

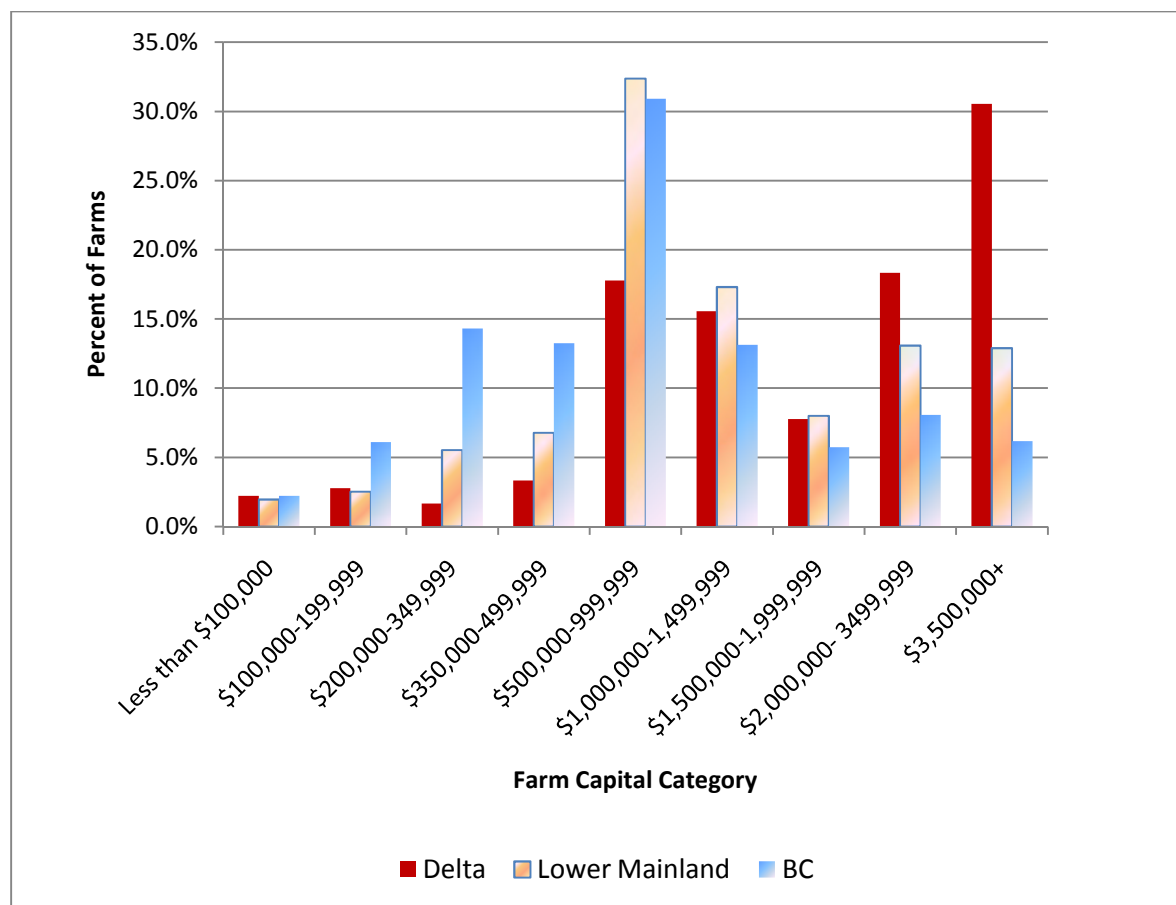


Figure 6-22: Comparison of the Distribution of Farm Capital Categories, Delta, Lower Mainland and BC, 2005

Figure 6-23 compares changes in farm capital over the 1995 to 2005 period. In addition to declining livestock inventory, Delta farmers did not replenish inventories of machinery and equipment in the 2000 to 2005 time frame. It is expected that low economic returns associated with field crops since 2005 may have placed further pressure on the sector since.

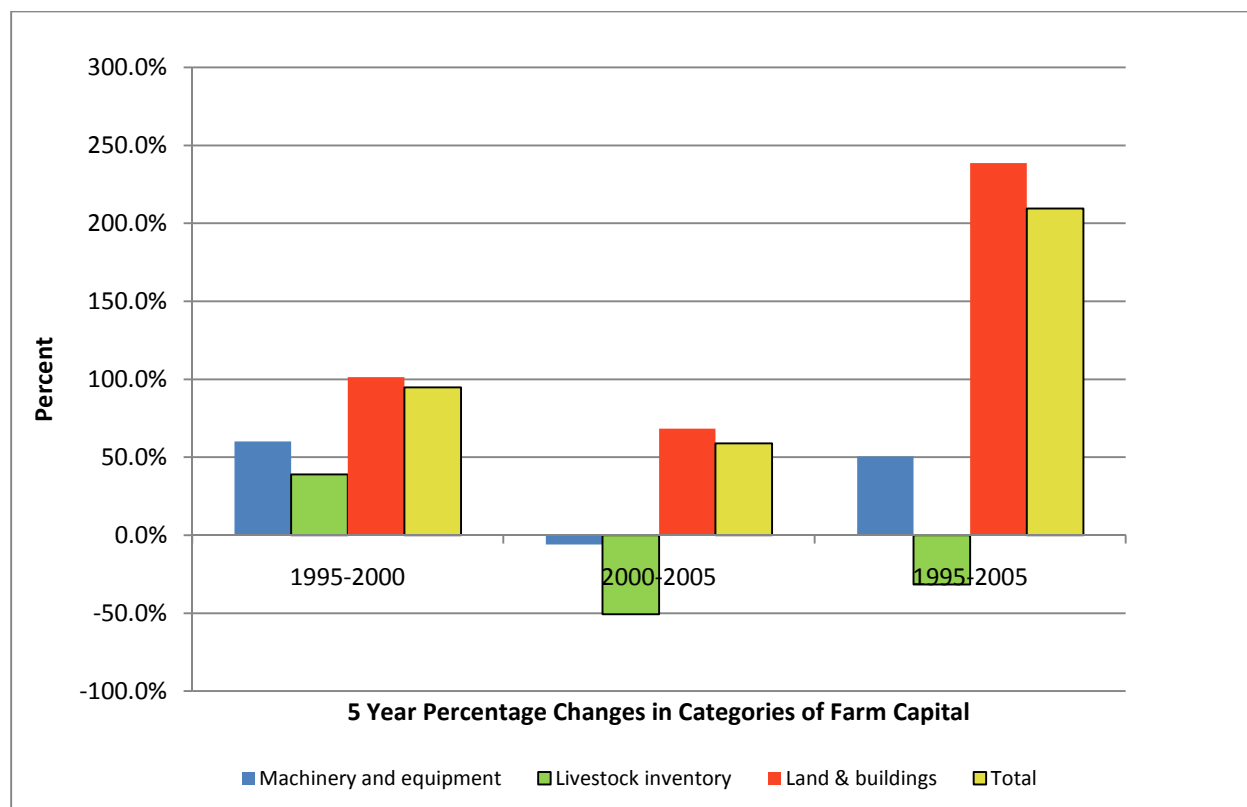


Figure 6-23: Comparison of Changes in Farm Capital Value in Delta, 1995 to 2000, 2000 to 2005, and 1995 to 2005

6.2.10 Contribution of Delta Agriculture to the Regional Economy

The Delta agriculture sector contributes directly to the local and regional economy through expenditures of farm gate revenue and creation of on-farm employment. Agricultural expenditures create indirect effects on businesses that buy from and sell to farmers. Service sectors that support the direct and indirect categories create induced impacts on income and employment.

Agricultural income and employment multiplier effects are relatively complicated to attribute in Delta and vary significantly by sector of the industry and region of the country. A recent study undertaken by the Abbotsford Chamber of Commerce assumed a conservative multiplier of 1.0 times the primary sector output.¹⁴³ A “rule of thumb” approach would suggest that the total additional economic impact on income within a state (province) is less than twice the original farm gate income.¹⁴⁴ Nonetheless, research done specifically in agriculture in Ontario suggests that the sales expenditure multiplier may be in the neighbourhood of 2.91.¹⁴⁵

¹⁴³ Abbotsford Chamber of Commerce. 2008. The economic impact of agriculture in Abbotsford (Market based goods and services). This is based on an even split between primary and secondary economic impacts.

http://www.southfraser.com/includes/documents/FINALEconomic_Impact_of_Agriculture_in_Abbotsford.pdf

¹⁴⁴ Coppedge, RO. 2003. Income multipliers in economic impact analysis. Cooperative Extension Service. New Mexico State University. http://aces.nmsu.edu/pubs/_z/Z-108.pdf

¹⁴⁵ Cummings, Dr H. n.d. The Economic impacts of agriculture on the economy of Huron County. University of Guelph. Study completed for the Huron County Federation of Agriculture.

In the greenhouse sector, the generation of employment, consumption of energy and services are especially significant although little in the way of regional value-added from farm products is generated since only a small portion of the products are processed. The dairy sector in the Delta relies on Lower Mainland inputs sourced outside of Delta, such as feed. The field crops support local fertilizer and crop input suppliers as well as consume petrochemical products, while processing occurs primarily up the valley in Abbotsford.

Assuming a conservative income multiplier of 1.15 and farm gate sales of \$190 million, Delta agriculture generates a minimum of \$219 million annually in regional indirect and induced income impacts.

Gross Farm Receipts (GFRs)¹⁴⁶ and Other Indicators

While the best source of information on the direct economic contribution of Delta agriculture is the Agriculture Census conducted by Statistics Canada every 5 years (2005 was the last Census), it should be noted that this data tends to underreport the contribution of agriculture because it is dated when released and not all farming activity may be captured. In the case of Delta, there are indications that while the gross agricultural revenues in the District may in fact be increasing significantly, margins in some sectors have tightened considerably in the 2005 to 2010 period.

Table 6-19 shows GFRs by farm type; a farm type is defined as a farm deriving over 50% of its receipts from that category. In 2005, Delta agriculture generated at \$190.3 million in GFRs and total direct farm expenses (not including depreciation) of \$165.9 million. Thus, in 2005, the Delta agricultural sector generated \$24.4 million in farm-based gross margin.¹⁴⁷

Greenhouse production generated 73% of the total GFRs in Delta in 2005, with virtually all of that attributable to greenhouse vegetable production (Table 6-19, column F). Other important contributors to municipal GFRs included potatoes (8.3%), fruits & berries (6.7%) and dairy (4.0%).

In terms of use of the land base, the column G of Table 6-19 indicates that potato operations are associated with about 32.4% of the total agricultural land base in Delta. Other dominant farm types controlling the land base include field vegetable farming (20.2%), fruits & berries (12.6%), and dairy (12.5%). Greenhouse operations control only 4.8% of the land base, with greenhouse vegetables representing 75% of it.

The distribution of farm capital¹⁴⁸ among farm types is presented in column H, Table 6-19. In 2005, greenhouses, nursery and floriculture accounted for 20.4% of the farm-related capital investment in

http://www.huroncounty.ca/econdev/downloads/HCF_Ag_Impact%20Study.pdf. That is, for each dollar in farm gate sales, there are \$2.91 in sales in businesses that deal with farmers.

¹⁴⁶ Gross farm receipts include receipts from all agricultural products, marketing board payments received, program and rebate payments received, dividends received from cooperatives, custom work and other farm receipts.

¹⁴⁷ Gross margin (also called gross profit in the literature) is defined here as the difference between revenue and the cost of making a product or providing a service, before deducting overhead, payroll, taxation, and interest payments.

¹⁴⁸ Farm capital includes the value of all farmland, buildings, farm machinery and equipment (including passenger vehicles used in the farm business), and livestock and poultry on Census day. Values for livestock and poultry inventories are calculated using data on average farm prices. Farm capital does not include the value of crops in the field or in storage, or farm inputs on hand, such as fertilizer and seed. <http://www.statcan.gc.ca/pub/95-629-x/2007000/4123857-eng.htm>

Delta, followed by the other potato enterprises (20.6%), fruits & berries (13.9%), field vegetables (12.6%) and dairy (7.3%). Total value of farm capital in Delta amounted to about \$876 million in 2005.

Between 2000 and 2005, GFRs increased 160% in the fruits & berries subgroup, followed by hay farming (138%), greenhouse vegetables (72%) and field vegetables (8%) (Column I, Table 6-19). GFR increases over the period were associated with more farms entering the sub-sectors in all cases, with the exception of greenhouse vegetables. Sheep enterprise GFRs increased over 500% but remain insignificant overall.

GFRs decreased most dramatically for floriculture operations (-92%), the beef farm types (-80%), poultry and eggs (-11.6%) and potato farming (-9.6%). Generally, the sub-sectors lost enterprises over the period

Changes in GFRS by agricultural sector are shown graphically in Figures 6-24 and 6-25. It is seen in Figure 6-25 that GFRS from greenhouse, nursery and floriculture accounted for over 70% of the total GFRs in the two years, but that the significance of greenhouse vegetables had continued to increase while floriculture retracted considerably. Fruits & berries have shown a rapid increase in significance in Delta, but still constitute less than 10% of total farming returns. Potato farming is declining in prominence, dairy is unchanged.

Table 6-19: Gross Farm Receipts (GFRs), Area and Farm Capital by Farm Type, Delta, 2000 to 2005

Column	2000		2005		2005	2005	2005	2005	Change in
	A	B	C	D	E	F	G	H	I
	#		#		Farm	% of GFRs	% of Farm	% of Farm	(2000 to
Farm Type	farms	GFRs	farms	GFRs	Capital		Area	Capital	2005)
Cattle ranching and farming	27	8,891,605	15	7,792,875	75,897,420	4.1%	12.5%	8.7%	-12.4%
Dairy cattle & milk production	11	7,715,108	9	7,562,499	64,155,375	4.0%	11.2%	7.3%	-2.0%
Beef cattle including feedlots	16	1,176,497	6	230,376	11,742,045	0.1%	1.3%	1.3%	-80.4%
Poultry & egg production	4	1,746,231	7	1,543,000	6,030,472	0.8%	0.6%	0.7%	-11.6%
Chicken egg production	2	x	4	x	x	x	x	x	x
Broiler & other meat chicken	1	x	1	x	x	x	x	x	x
Other poultry	1	x	2	x	x	x	x	x	x
Sheep and goat farming	7	76,906	5	475,502	6,199,496	0.2%	0.5%	0.7%	518.3%
Goat farming	1	x	0	-	-	-	-	-	-
Other animal production	42	2,147,895	35	2,140,225	48,328,547	1.1%	3.1%	5.5%	-0.4%
Horse and other equine	36	1,973,333	34	x	x	x	x	x	x
Livestock combination	2	x	1	x	x	x	x	x	x
Other miscellaneous animal	4	x	1	x	x	x	x	x	x
Oilseed and grain farming	4	320,418	1	x	x	x	x	x	x
Vegetable and melon farming	48	23,453,134	39	22,276,995	290,708,146	11.7%	52.6%	33.2%	-5.0%
Potato farming	26	17,379,246	14	15,716,232	180,422,522	8.3%	32.4%	20.6%	-9.6%
Other field vegetables	22	6,073,888	25	6,560,763	110,285,624	3.4%	20.2%	12.6%	8.0%
Fruits, berries & tree nuts	18	4,871,230	31	12,666,632	121,836,622	6.7%	12.6%	13.9%	160.0%
GH, nursery & floriculture	34	117,404,354	32	139,263,807	207,750,011	73.2%	4.8%	23.7%	18.6%
Mushroom production	1	x	1	x	x	x	x	x	x
Other food crops under cover	11	77,709,264	11	133,429,193	178,710,397	70.1%	3.6%	20.4%	71.7%
Nursery and tree production	8	x	11	x	x	x	x	x	x
Floriculture production	14	37,690,502	9	3,120,819	11,108,000	1.6%	0.5%	1.3%	-91.7%
Other crop farming	12	1,929,698	15	x	x	x	x	x	x
Hay farming	7	117,898	12	280,380	34,742,272	0.1%	3.0%	4.0%	137.8%
Fruit & vegetable comb.	1	x	3	x	x	x	x	x	x
Other miscellaneous crop	4	x	0	-	-	-	-	-	-
All other not specified	x	3,990,950	x	8,730,276	150,924,580	4.6%	11.0%	11.7%	118.8%
All farms	196	160,841,471	180	190,315,672	876,157,405	100.0%	100.0%	100.0%	18.3%

Notes: "x" = not reported for reasons of confidentiality. **Source:** Statistics Canada. Agriculture Census 2000, 2005. Custom data sort.

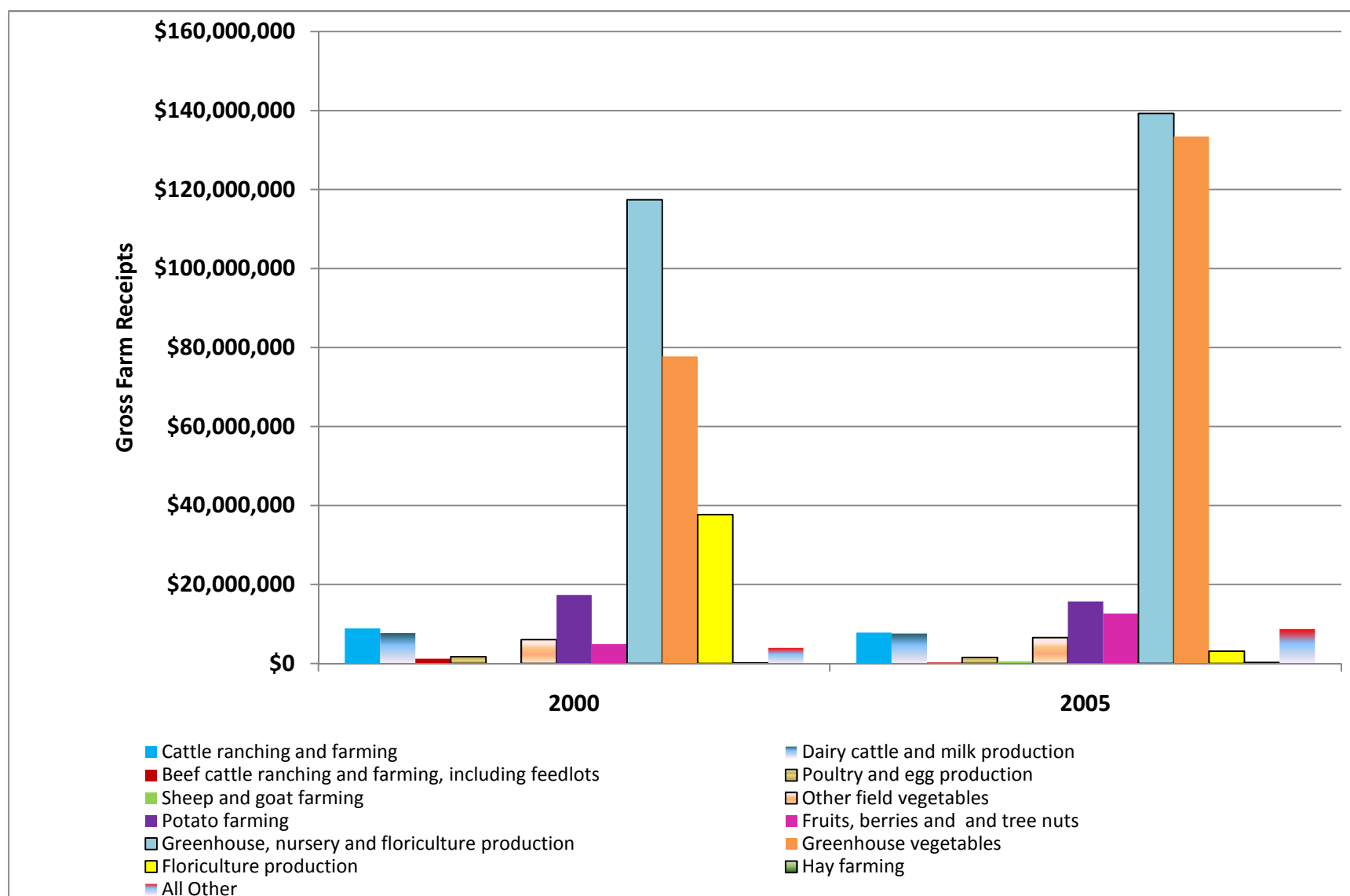


Figure 6-24: Distribution of Gross Farm Receipts by Farm Type, Delta, 2000 and 2005

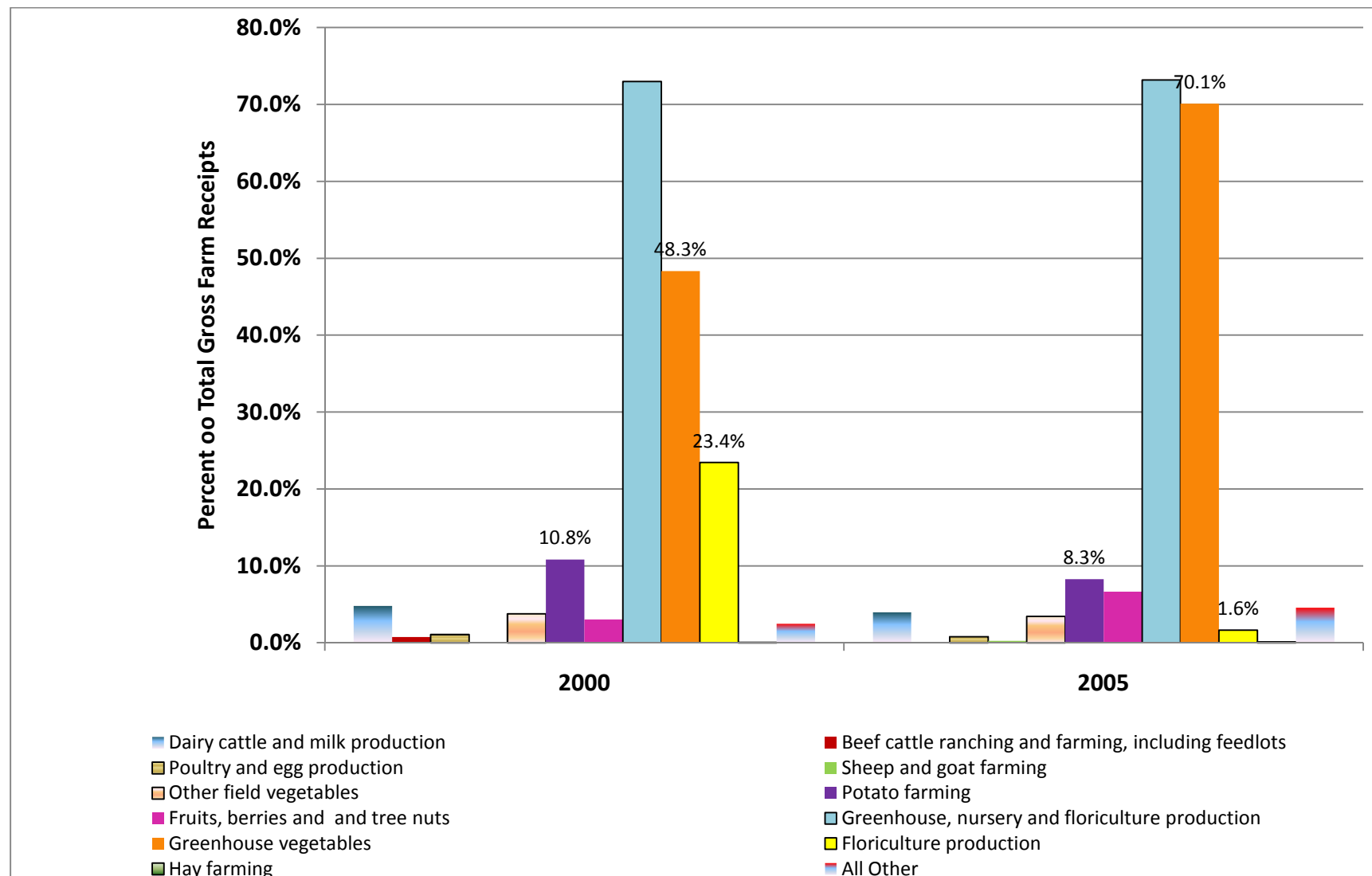


Figure 6-25: Percentage Distribution of Gross Farm Receipts by Farm Type, Delta, 2000 and 2005

Average GFRs in Delta were about \$1,057,000 per farm in 2005 (see column A, Table 6-20). The greenhouse vegetable category had the highest average GFRs per farm, followed by potato and dairy operations. Only the greenhouse vegetable sub-sector and the potato sub sector had GFRs higher than the Delta average. GFRs for many other farm types are considerably lower.

Average GFRs per hectare by farm type are indicated in Table 6-20, column B. Greenhouse vegetable operations generate almost \$500,000 per ha, followed by floriculture production (\$80,000 per ha) and poultry (\$36,000 per ha). In general, greenhouse vegetable operations generate GFRs per ha that are 20 times the Delta average.

Gross Margins

Gross margins in 2005 (column C Table 6-20) were positive for all farm types except beef and “other animal” operations. While greenhouse vegetable and dairy operations produced the largest gross margins per farm, hay, dairy, poultry and floriculture operations generated the highest gross margins as percentages of GFRs (Table 6-20, column D). For Delta as a whole, farming gross margin averaged only 12.8%, which is low for the sector overall. Gross margin by farm type as a percentage of GFRs is presented graphically in Figure 6-26. Figure 6-27 shows that greenhouse vegetables represented over 70% of the gross margins generated in Delta.

Gross margin¹⁴⁹ generated per ha is indicated in Column E of Table 6-20. In 2005, vegetable greenhouse production generated the highest gross margins at slightly over \$64,000 per ha, followed by floriculture (\$16,500 per ha), poultry and egg (\$8,400) and dairy (\$2,200 per ha). Negative gross margin per ha characterized the beef and “other animal” farm types. While the average gross margin per hectare across all farm types in Delta in 2005 was about \$3,200, this value is distorted by greenhouse production with the observation that field crops were unlikely to generate gross margins more than \$1,000/hectare. In fact if greenhouse, nursery and floriculture farm types are excluded, the remainder of Delta agriculture generated average gross margins/farm of \$39,500, or about \$816/ha (last row, Table 6-20).

Between 2000 and 2005, gross margins per ha rose in the poultry and greenhouse vegetable farm types (Column F, Table 6-20). Gross margin per ha dropped in virtually every other farm type, with the exception of dairy, which experienced marginal change. While, overall average per ha gross margins in Delta rose 16%, when greenhouse, nursery and floriculture farm types are excluded gross margins per ha actually fell 11% with virtually all other farm types experienced tightening margins (last row, Table 6-20).

The various farm types in Delta make use of the land base in differing intensities. Vegetable operations and those livestock operations with a large intensive horticultural element (e.g. dairy) utilize about 90% of their land base to produce crops. Even though other farm types use the soils less extensively, on average across all farm types, about 84% of the farm land base is used to produce crops (see column G, Table 6-20).

It is interesting to note that in 2005 the average GFRs per ha in Delta, at \$23,508, were about 60% higher than comparable average GFRs per ha in Leamington, Ontario (at \$15,864). This further confirms the exceptional productivity of Delta compared to other centers of agricultural production in Canada with high levels of vegetable greenhouse production.

¹⁴⁹ Gross margin is defined as the excess of gross farm receipts over direct (or variable) farm operating expenses. It does not include fixed costs, such as depreciation, asset debt servicing, or return to management.

Table 6-20: Selected Indicators of Farming Activity by Farm Type, Delta, 2005

Farm Type (1)	GFRs/Farm	GFRs/Ha	Average Gross (2) Margin/Farm	Gross Margin as a Percent of GFRs	Gross Margin /Ha	Percent Change in Gross Margin/Ha 2000-2005	Percent of Total Farm in Crop	Percent Change in Farm Expenses/Ha 2000-2005
Column	A	B	C	D	E	F	G	H
Dairy cattle & milk production	\$840,278	\$9,014	\$206,325	24.6%	\$2,213	2.5%	90.3%	4.6%
Beef cattle, including feedlots	\$38,396	\$2,327	-\$6,623	-17.2%	-\$401	-241.7%	72.7%	12.7%
Poultry and egg production	\$220,429	\$35,884	\$51,442	23.3%	\$8,374	74.8%	x	-19.1%
Sheep and goat farming	\$95,100	\$13,586	\$9,632	10.1%	\$1,376	-436.1%	x	546.6%
Other animal production	\$61,149	\$9,069	-\$20,910	-34.2%	-\$3,101	-20137.9%	39.4%	26.1%
Potato farming	\$1,122,588	\$6,444	\$63,313	5.6%	\$363	-48.4%	93.3%	23.4%
Other field vegetables	\$262,431	\$4,328	\$29,992	11.4%	\$495	-38.2%	86.1%	3.3%
Fruits, berries & tree nut	\$408,601	\$13,376	\$41,855	10.2%	\$1,370	-39.2%	83.3%	64.5%
Greenhouse vegetables	\$12,129,927	\$492,359	\$1,580,641	13.0%	\$64,159	23.3%	9.2%(3)	64.7%
Floriculture production	\$346,758	\$80,021	\$71,598	20.6%	\$16,523	-17.1%	71.8%	-84.5%
Hay farming	\$23,365	\$1,235	\$6,840	29.3%	\$362	-249.8%	83.7%	-20.3%
All Other	\$171,182	\$8,197	\$21,606	12.6%	\$1,035	41.7%	80.7%	80.7%
Averages (with greenhouse vegetables and floriculture)	\$1,057,309	\$25,308	\$135,414	12.8%	\$3,241	16.2%	83.8%	32.4%
Averages (excluding greenhouse vegetables and floriculture)	\$344,945	\$7,131	\$39,480	11.4%	816	-11.1%	86.8%	26.3%

Notes: (1) A farm type falls into a farm type category if greater than 50% of its gross farm receipts are derived from that category; (2) Gross margin is defined as the excess of GFRs over direct farm expenses; (3) This does not include the area in covered crop production; (4) "x" = not reported for confidentiality reasons.

Source: Statistics Canada. Agriculture Census 2000, 2005. Custom data sort.

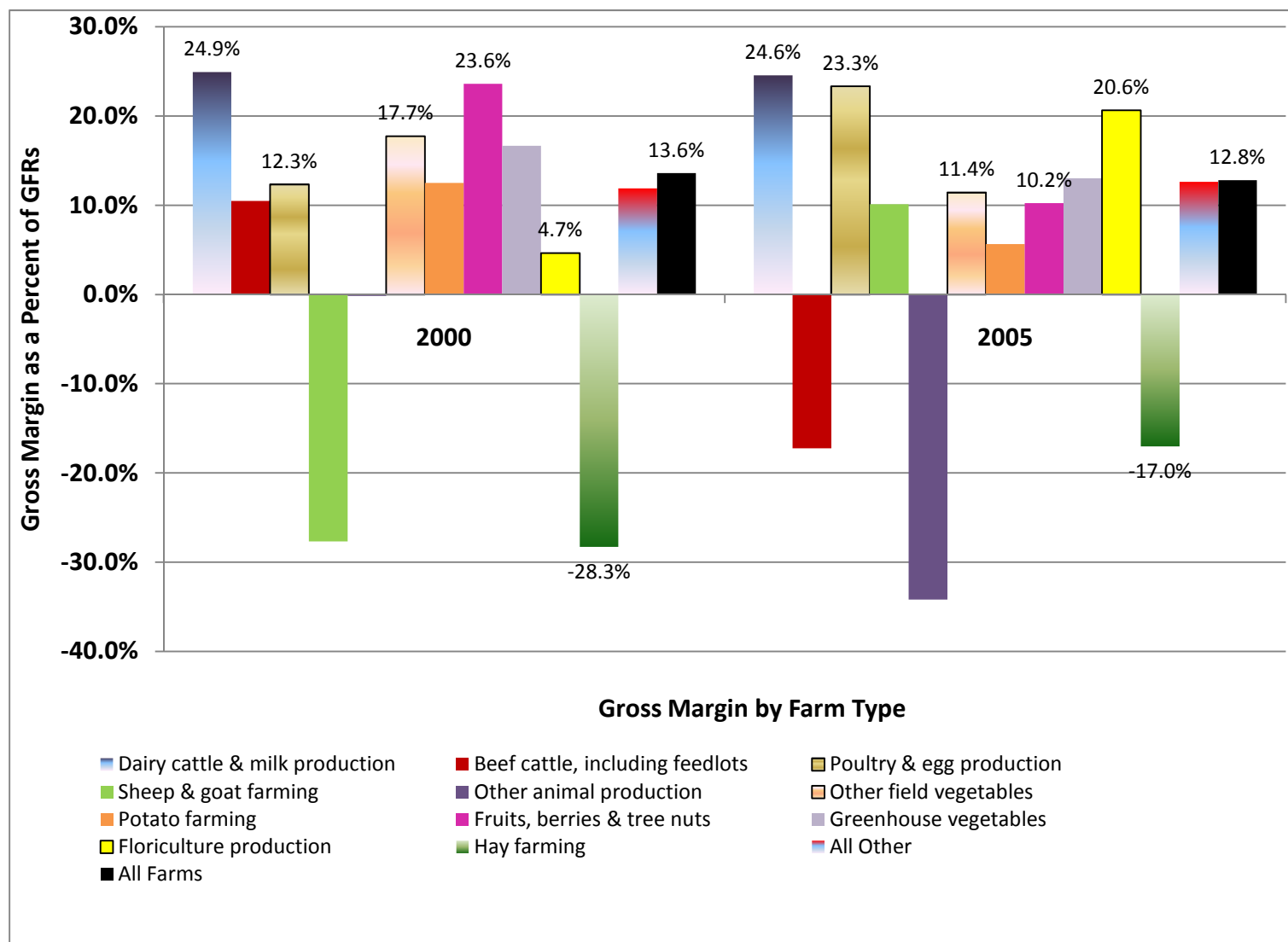


Figure 6-26: Gross Margin as a Percent of Gross Farm Receipts, by Farm Type, Delta, 2000 and 2005

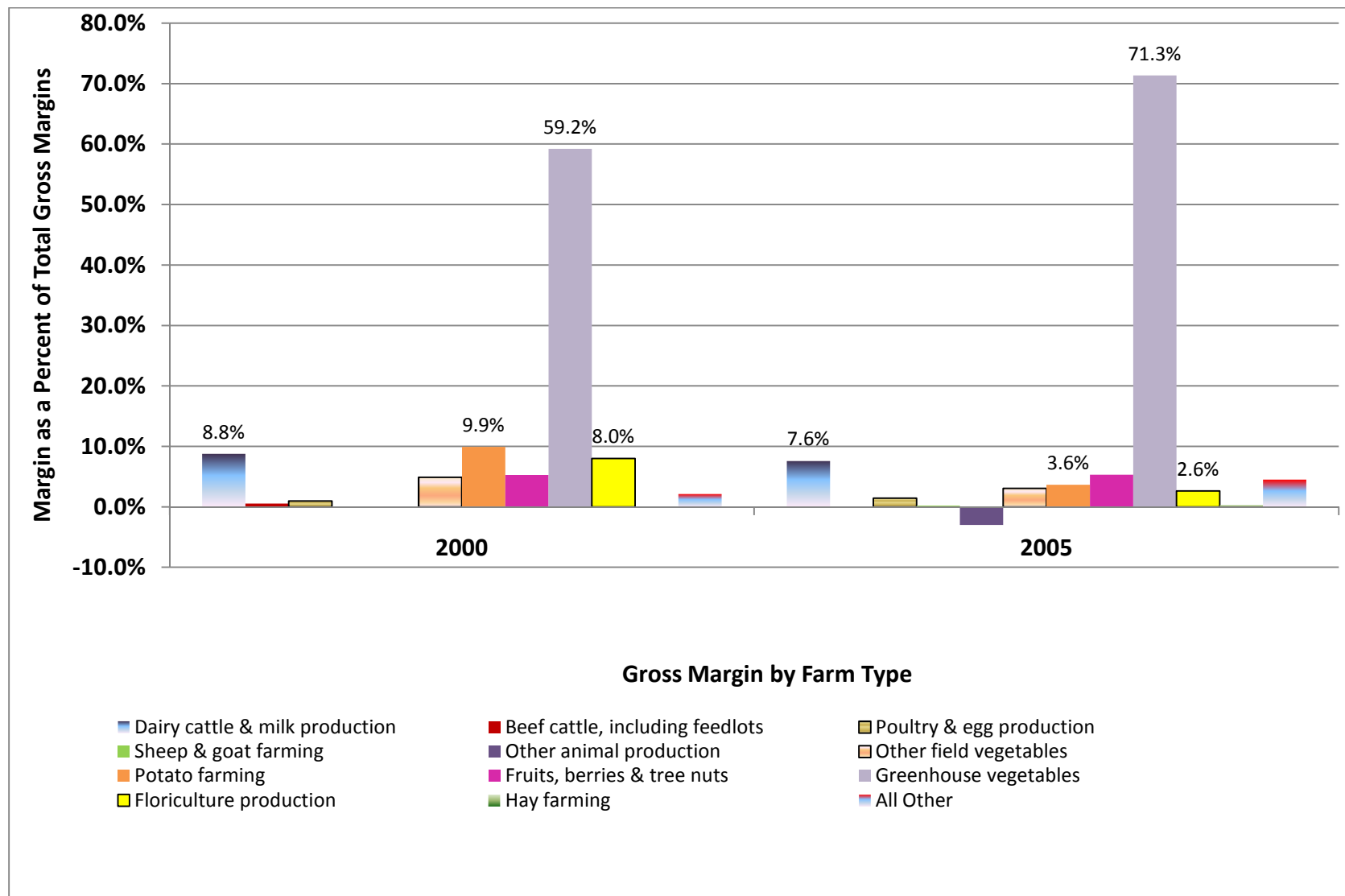


Figure 6-27: Gross Margins by Farm Type as a Percentage of Total Gross Farm Margin in Delta, 2005

Farmland holding by farm type in Delta is shown in Figure 6-28. The proportion of land held by the field vegetable farm types represented about 57% of all farmland in 2000, but dropped to 53% by 2005. Dairy farm type continued to hold about 11% of the land base in both Census periods. Hay farms operated on about 3% of the farmland base. Fruits & berries farm type operated almost 13% of the farm land base in 2005. Land held in other land uses comprised about 14% of Delta farmland.

A comparison of GFRs, gross margin and farmland base by farm type is presented in Figure 6-29. This comparison helps to gauge the role of farm types in Delta. Greenhouse vegetables, with 73% of GFRs accounted for 71% of total gross margin but only a miniscule portion of the land base (approx. 5%). The potato farm type, with the 2nd largest share of GFRs and 3rd largest total gross margin (after dairy), holds the largest portion of the land base followed by field vegetable farms. Berries (fruits and berries category) are also significant in Delta in all three categories. Considering that potatoes are grown in rotation with field vegetables, vegetable farms currently operate about 53% of the land base. Other animal production, including equine hold insignificant shares of GFRs or land base and do not generate gross margins overall.

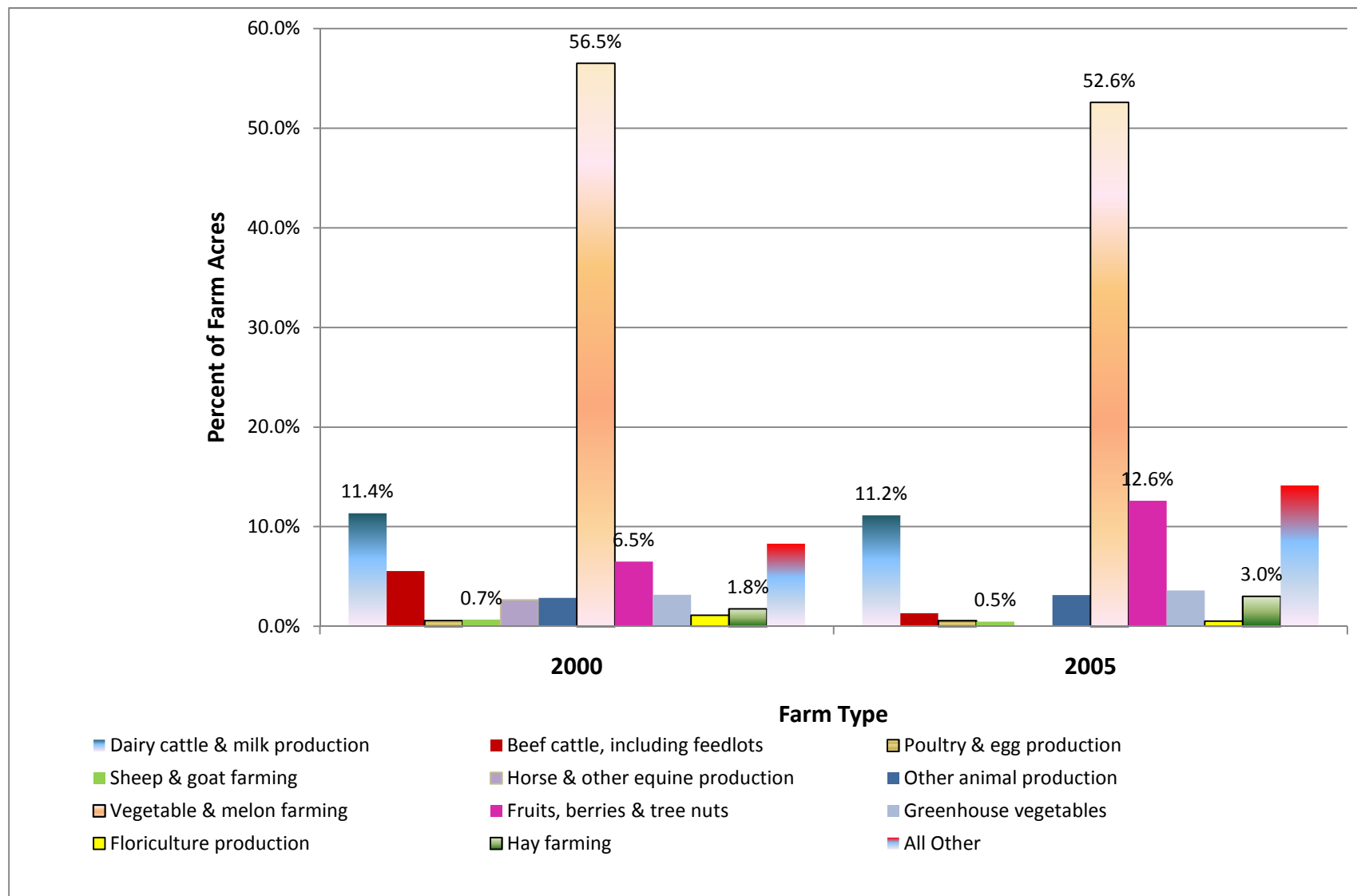


Figure 6-28: Percent of Total Farmland in Crop by Farm Type, Delta, 2000 and 2005

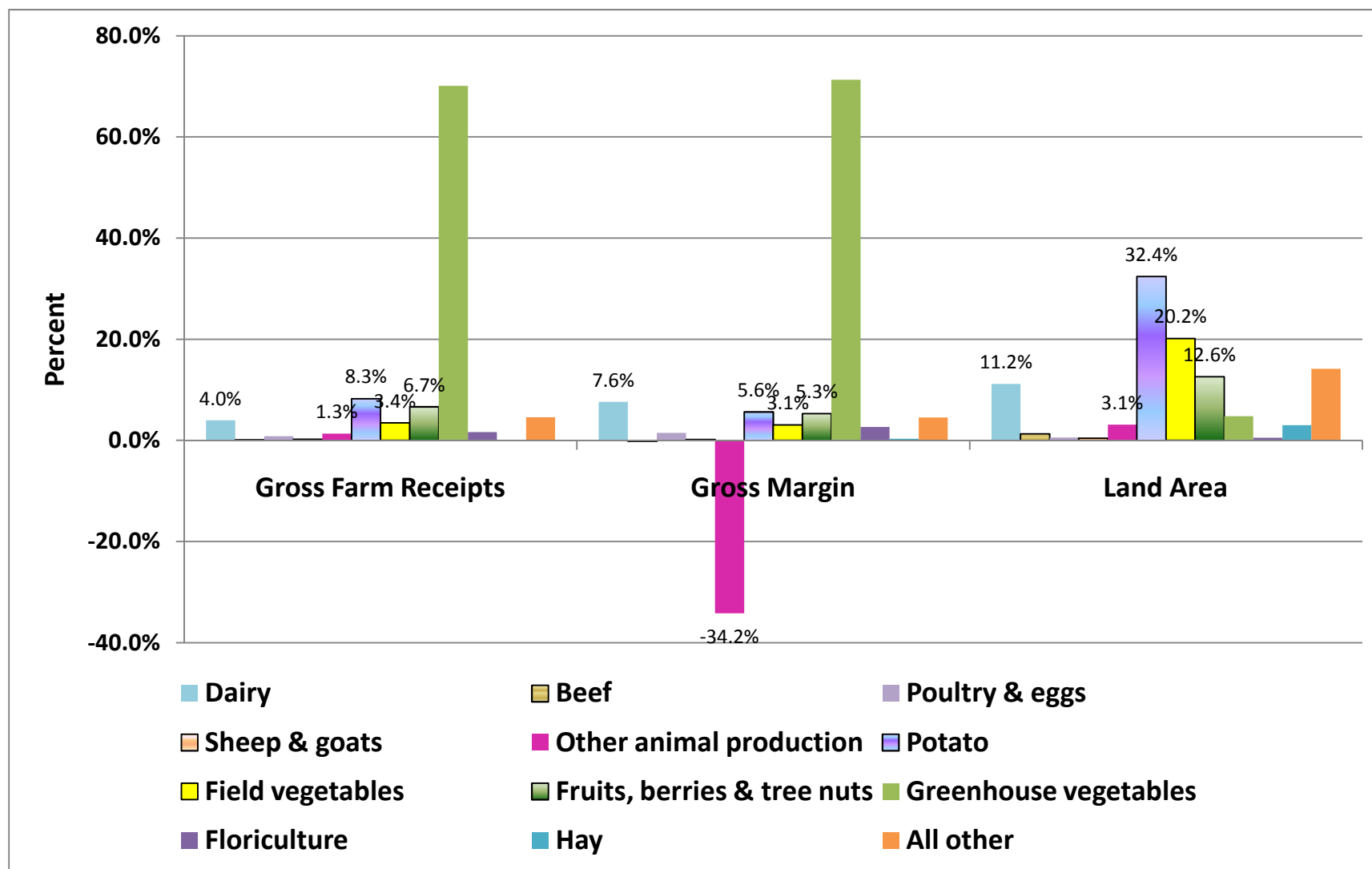


Figure 6-29: Comparison of Percent of Gross Farm Receipts, Gross Margin and Land Area Farmed, by Farm Type, Delta, 2005

Distribution of Farm Gross Farm Receipts (GFRs) by Farm Size

Delta's farm sector exhibits a wide range of farm sizes (Table 6-14, above), with a relatively high proportion (>70%) of farms over 10 ac (2.5 ha). Farm numbers only declined 3% over the period.

As Table 6-21 shows, about 58% of the Census farms generated gross farm receipts of \$10,000 or less in 1995 and this proportion had shrunk to 26% in 2005. Fifty-four percent (54%) of Census farms generated more than \$100,000 in GFRs in 2005 and 13% generated more \$1 million. Large farms have become larger and this is reflected in the growth of farms with GFRs larger than \$1 million. The proportion of farms in some other gross farm receipts category as decreased between 1995 and 2005, particularly in the \$10,000 to \$25,000 category. Nevertheless, there is also a modest increase in farms generating \$25,999 to \$50,000, annually. This farm revenue distribution is shown graphically in Figure 6-30.

Table 6-21: Distribution of Delta Farms by Gross Farm Receipt Category, 1995 to 2005

GFR Category	1995	2000	2005	1995	2000	2005	Percent Change in Proportion of Farms 1995 to 2005
	# of farms			% of farms (cumulative)			
<\$2,500	15	15		8.1%	7.7%		
\$2,500-4,999	23	20		20.4%	17.9%		
\$5,000-9,999 (1)	18	12	47	30.1%	24.0%	26.1%	-13.3%
\$10,000-24,999	21	25	10	41.4%	36.7%	31.7%	-50.8%
\$25,000-49,999	12	19	15	47.8%	46.4%	40.0%	29.2%
\$50,000-99,999	21	17	11	59.1%	55.1%	46.1%	-45.9%
\$100,000-249,999	19	24	27	69.4%	67.3%	61.1%	46.8%
\$250,000-499,999	32	28	28	86.6%	81.6%	76.7%	-9.6%
\$500,000-999,999 (2)	25	36	18	100.0%	100.0%	86.7%	73.6%
\$1,000,000- 1,999,999			12	100.0%	100.0%	93.3%	
\$2,000,000+			12	100.0%	100.0%	100.0%	
Totals	186	196	180				

Notes: (1) Number of farms for 2005 is all farms with GFRs under \$9,999; (2) In 1995 and 2000, this includes all farms over \$500,000

Source: Statistics Canada. Agriculture Census. 1995, 2000, 2005.

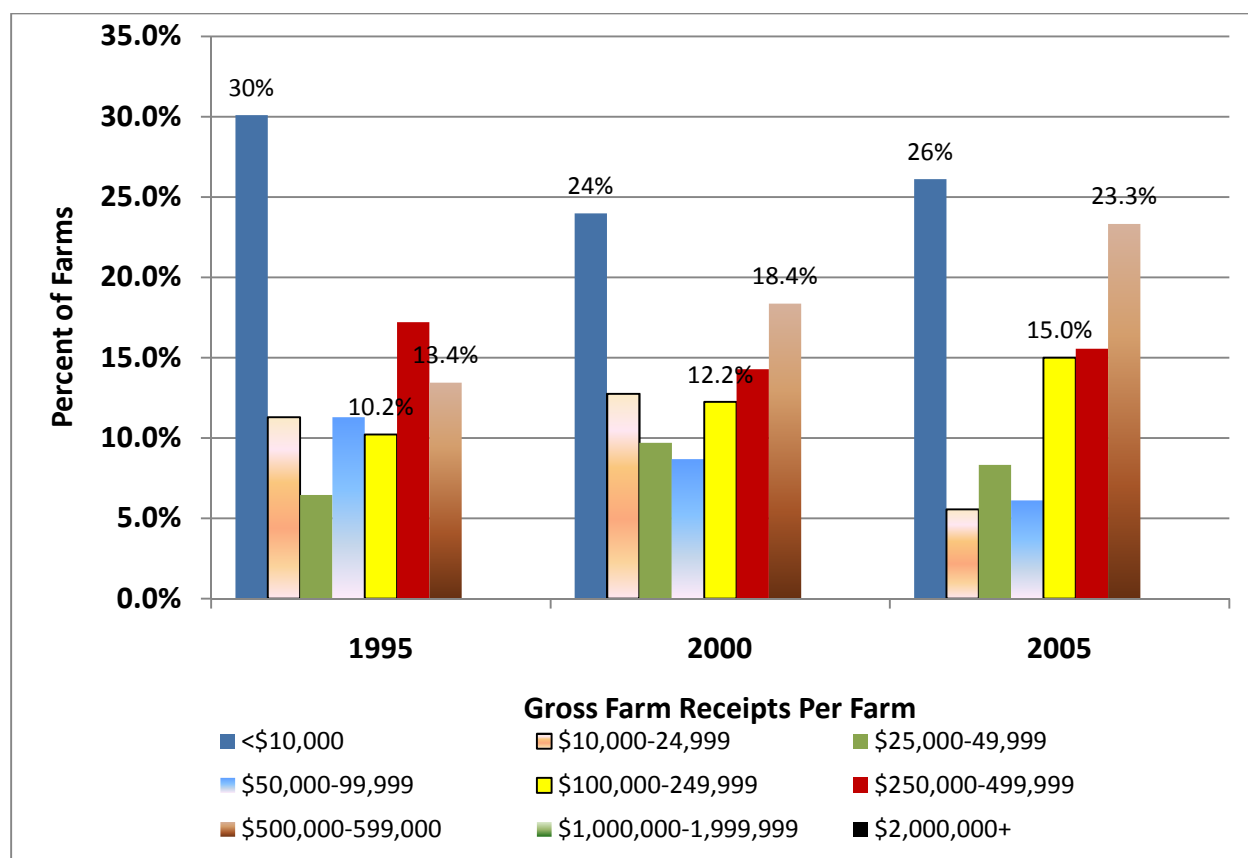


Figure 6-30: Distribution of Delta Farms by Gross Farm Receipts Category, 1995, 2005 and 2005.

6.2.11 Farm Expenses

Delta-based agricultural operations expended \$166 million on farm inputs in 2005 (see Table 6-22). Major expense categories included cash wages (21%), custom work & machine rental (16%) and fuel (13.4%). In the 1995 to 2005 period, farm expenses have increased most dramatically for custom work (367%), electricity (354%), interest expenses (188%), seeds and seedlings (159%) and wage (155%). These expenditure patterns are consistent with increasing specialization, more investment in agricultural assets, and increased reliance on contract workers to carry out farming operations.

A graphic comparison of farm expenses between 1995 and 2005 is presented in Figure 6-31. As a proportion of farm expenses, expenditures on labour and seeds and plants have not increased in the period. Reliance on custom work and machinery rental has increased. Expenditures on livestock and feeds declined. Nevertheless, gross margin has been stable through the period (red column in Figure 5-34).

Table 6-22: Operating Expenses of Delta Agricultural Operations, 1995 to 2005

	1995	2000	2005	Percent Change 1995-2005	Percent of Total Expenses 2005
Rent/leasing	\$2,124,826	3,775,579	2,940,393	38.4%	1.8%
Rental land & buildings		1,960,131	1,869,078		1.1%
Rental machinery & equipment		1,815,448	1,071,315		0.6%
Cash wages	13,460,743	33,852,700	34,332,026	155.1%	20.7%
Insurance	1,089,607				
Total machinery expenses	3,675,236				
Crop expenses	10,148,195				
Fertilizer & lime	3,768,829	4,986,837	6,007,085	59.4%	3.6%
Chemical purchases	1,312,870	2,373,982	3,051,869	132.5%	1.8%
Seed and seedlings	5,066,496	14,295,390	13,117,883	158.9%	7.9%
Seed from commercial sources	4,528,407				
Packaging material	3,930,270				
Livestock expenses	4,744,660				
Feed supplements & hay		3,875,372	3,889,747		2.3%
Feed suppl./ hay from commercial suppliers			3,537,068		
Feed purchases from other farmers		483,653			
Livestock and poultry purchases		1,174,562	673,414		0.4%
Veterinary		505,359	590,648		0.4%
Custom work & machine rental	5,728,827	10,621,512	26,678,565	365.7%	16.1%
Interest expenses	3,148,605	10,460,422	9,083,751	188.5%	5.5%
Electricity/telephone/telecommunications	958,987	3,229,733	2,918,716	354.3%	
Fuel for heating & drying	926,548	642,504			1.8%
All fuel expenses		12,396,918	22,172,001		13.4%
Repairs & maintenance					
R&M machinery & equipment	2,316,690	3,615,180	4,762,399		2.9%
R&M to buildings & fences	1,958,602	2,316,690	1,515,076	105.6%	0.9%
Other expenses	5,448,772	31,843,153	34,207,549	39.4%	20.6%
Total Operating Expenses	\$56,471,900	\$138,965,301	\$165,941,122	193.8%	

Notes: Expense reporting categories have changed over the period. **Source:** Statistics Canada. Agriculture Census

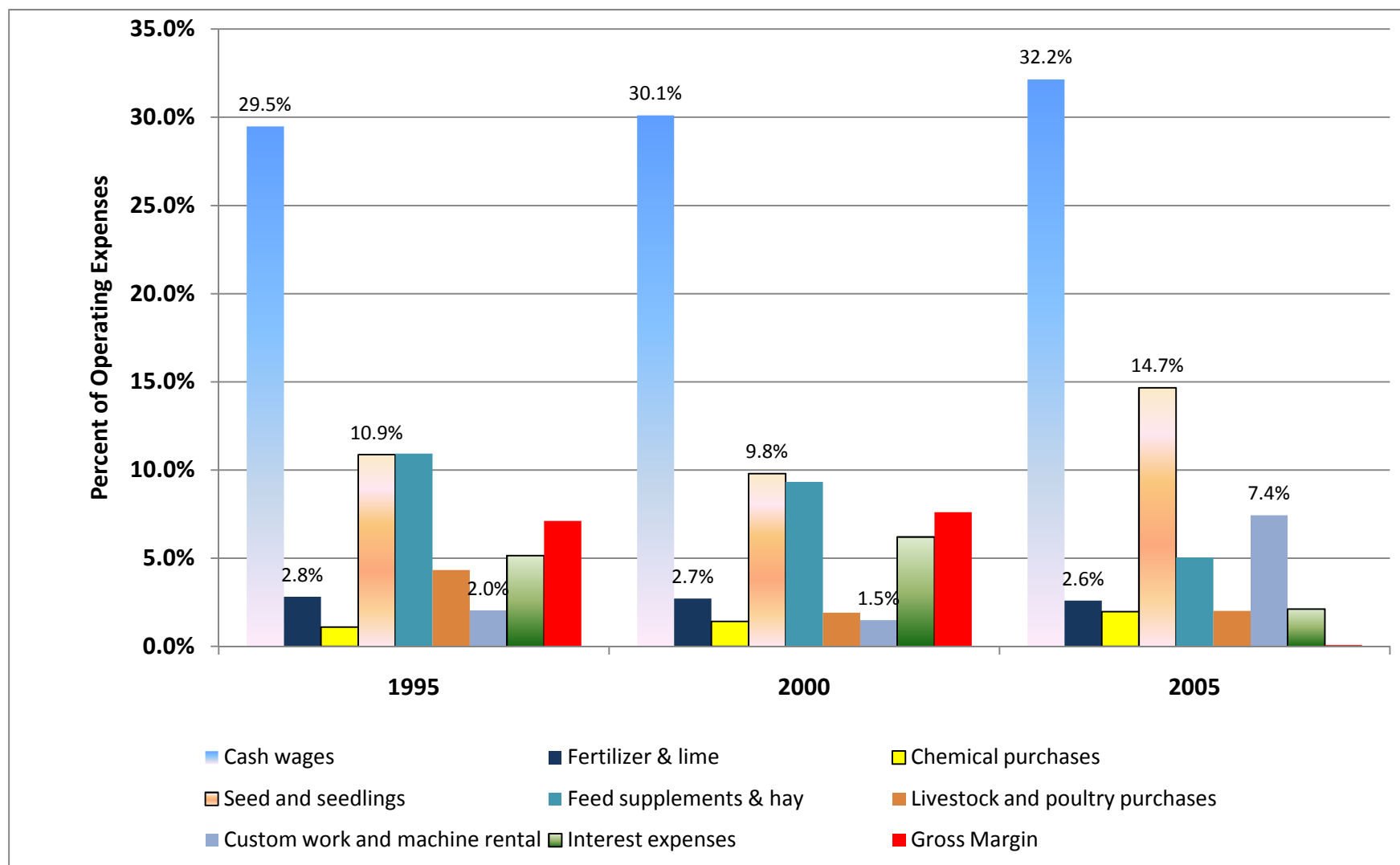


Figure 6-31: Distribution of Farm Operating Expenditures by Category, Delta, 1995 to 2005

6.2.12 Local Agricultural Employment

Delta agriculture creates substantial community-based and regional employment in the municipality. In addition to the self-employment of 265 operators on the 180 agricultural enterprises, farmers in 2005 paid for 71,912 weeks of agricultural labour (see Table 6-23). This is the full-time equivalent of about 1,500 person years of work¹⁵⁰ that resulted in wages and salaries of \$34.3 million paid by farm operators to workers on farms in the community.

In addition, on-farm employment creates other jobs throughout the economy.¹⁵¹ Based on a conservative multiplier of 1.5, Delta primary agricultural production sector may be expected to support at least another 2,250 off-farm jobs in the region.

Roughly 47% of the paid labour requirement of Delta farms is year-round. As Table 6-22 above shows, total on-farm paid labour requirements increased about 155% between 1995 and 2005. The seasonal workforce has increased 400% while the year-round work force has increased 88%. Since 2000, however, the seasonal workforce has increased 67% while the year-round requirement has been static.¹⁵²

Table 6-23: Paid Labour on Agricultural Operations, Delta, 1995 to 2005

	1995		2000		2005			Percent Change 1995- 2005	Percent Change 2000- 2005
Paid Labour	# of farms	# of weeks	# of farms	# of weeks	# of farms	# of weeks	Percent 2005		
Total	114	26,123	124	56,948	118	71,912		175.3%	26.3%
Year-round	66	18,670	80	34,417	71	34,102	47.4%	82.7%	-0.9%
Seasonal	83	7,453	78	22,531	85	37,810	52.6%	407.3%	67.8%
Number of Workers									
Full-time Equivalent									
(1)		544		1,186		1,498			

Notes: (1) Based on 48 weeks per worker year

Source: Statistics Canada. Agriculture Census

In 2005, 115 (44%) of the 181 Census farms in Delta were one-operator operations, with the remaining 56% having two or more operators. Female operators comprise almost 29% of all operators, and a

¹⁵⁰ Based on 48 weeks of work per year.

¹⁵¹ Content First, LLC. US Industry Employment Multipliers. <http://www.contentfirst.com/multiplier.shtml> uses an employment multiplier of 1.5. Research based on Huron County Ontario suggests the multiplier could be 3.53 jobs created off-farm per job on-farm. Cummings, Dr H. n.d. The Economic impacts of agriculture on the economy of Huron County. University of Guelph. Study completed for the Huron County Federation of Agriculture. http://www.huroncounty.ca/econdev/downloads/HCFA_Ag_Impact%20Study.pdf.

¹⁵² Currently, several agricultural operations have access to seasonal agricultural workers from off-shore for their labour needs.

slightly higher proportion on farms with two or more operators. On average, each farming operation had 1.47 operators.

Table 6-24 indicates that 47% of farm operators were 55 years of age or older in 2005, and only 7.5% were younger than 35 years. Overall, the average age of farm operators in Delta is about 54.6 years, marginally older than for BC (53.6 years) but more significantly older than for Canada as a whole (52 years).

Table 6-24: Age Distribution of Farm Operators, Delta, 2005

	Age (years)			Total Number	Average Age
	<35	35-54	55+		
One operator farms	0	50	55	105	55.8
2 or more operator farms	10	70	70	150	53.8
All farms	20	120	125	265	54.6
Percent	7.5%	45.3%	47.2%	100.0%	

Source: Statistics Canada. Agriculture Census, 2005

While 28.3% of farm operators worked less than 20 hours per week on the farm in 2005, 56% of farm operators did no paid non-farm work. As Table 6-25 also shows, roughly 17% of farm operators held off-farm jobs requiring 40 hours or more per week and 49% of farm operators worked 40 hours per week and more on the farm, signifying that farming in Delta is a full time activity for about half the operators.

Table 6-25: Hours Worked by Farm Operators On and Off the Farm, Delta, 2005

			<20 hrs/week	20 to 40 hrs/week	40 + hrs/week	Total
Number of Operators						
On-Farm Work			75	60	130	265
Percent			28.3%	22.6%	49.1%	100.0%

No Paid Non-Farm Work		<20 hrs/week	20 to 40 hrs/week	40 + hrs/week	Total
Number of Operators					
Off-Farm Work	145	30	40	45	260
Percent	55.8%	11.5%	15.4%	17.3%	100.0%

Source: Statistics Canada. Agriculture Census

6.3 Trends in the Local Agricultural Economy

Delta was one of the first areas settled along the Fraser River. Agriculture has been an identifying characteristic of the Delta community for well over 140 years and since William and Thomas Ladner homesteaded in 1868. Due to its strategic location, by the late 1890's Ladner serviced markets throughout the Lower Mainland. Mixed farming supplied vegetables, dairy products, horses, livestock, animal feed and forage to logging camps and human populations along the BC lower coast.

When the Massey Tunnel opened in 1960, farming was fundamentally affected by the improved access to points north. Farm specialized into vegetable, berry and dairy operations in response to the increased ability to service Vancouver and area. Delta also retained its strategic location as ferry and shipping terminals were established at Roberts Bank and railway and road networks crisscrossed the municipality.

Greenhouse vegetable production was introduced to Delta in the late 1980's. The sector took off in the 1990's and Delta's greenhouse sector grew rapidly due to its favourable climate. Although occupying a very small proportion of the farmland base in Delta, the greenhouse sector now dwarfs other agricultural sectors in terms of economic values of production.

Nonetheless, field agriculture and dairy farming continue to be important and represent a great proportion of agricultural land use in Delta. While supply managed sectors (e.g., dairy and poultry) continue to be protected from global trade events, virtually all other agricultural sectors now compete with foreign exporters in domestic and international markets. Delta farmers are being hard pressed by the relatively higher costs of operating in Delta, compounded by the crop losses and damages created by waterfowl, and by numerous factors threatening farming viability.

6.3.1 Livestock Sectors

Delta has relatively small numbers of livestock, nowhere near the herds or flocks required to supply the local meat, dairy and egg markets. The supply managed poultry sectors have never had a prominent presence in Delta. Beef production is not economically feasible for commercial operations, although small herds are kept in the municipality for personal consumption.

Avian influenza (AI) outbreaks in the Fraser Valley in 2004 and 2005 caused depopulation of millions of birds and a significant reduction in output in all poultry sectors. Nevertheless, consumers prefer poultry and per capita consumption of poultry meat, which continues to be steady in response to consumer demand for leaner meats and competitive pricing. Poultry meat (chicken and turkey) consumption in the US has overtaken the top spot per capita (36 kgs evisc. per person in 2006)¹⁵³ and holds down about 43% of total meat protein (beef, pork and chicken) consumption in North America. Poultry consumption has been projected to significantly exceed both beef and pork consumption in Canada by 2020.¹⁵⁴ Favourable product characteristics include low fat, excellent nutrition, easy preparation, and compatible with a wide range of quick-service and casual dining menus.

Mainstream industry trends are clearly toward reduced use of in-feed antibiotics, anticoccidials and growth promoters in poultry management and production, in response to sustained consumer demand

¹⁵³ Agriculture and Agri-Food Canada. Canada's poultry industry. http://www.ats.agr.gc.ca/supply/3315_e.htm

¹⁵⁴ See Serecon Management Consulting Inc. 2005. Canadian Food Trends to 2020: A long Range Consumer Outlook. Report prepared for Agriculture and Agri-Food Canada. http://www4.agr.gc.ca/resources/prod/doc/agr/pdf/ft-ta_e.pdf

for drug-free poultry products, more stringent regulatory trends and the emergence of alternative disease controls, such as vaccination.¹⁵⁵

On-farm food safety and animal care issues are closely linked. Good husbandry, resulting in healthy and comfortable flocks, is an auditable practice in the industry and Codes of Practice for the Care and Handling of Farm Animals exist for breeders, farmers, handlers, transporters and processors of poultry.

Compared with other Canadian meat protein commodities, poultry emits only 47% as much greenhouse gases (GHGs)¹⁵⁶ per unit of live weight as pork and only 10% as much GHGs per unit of live weight as beef.¹⁵⁷

The supply managed sectors (i.e., the 4 poultry and dairy) have additional costs associated with the need for acquisition of quota before production is allowed. Typical per head quota values include broilers (\$60-\$65 per 1.929 kg), turkeys (\$6 per kg), and egg layer hens (\$250 per hen).

Flocks of less than 99 laying hens, 200 broilers, and 50 turkeys are allowed without quota if produced for personal consumption (i.e., not for sale).

There are opportunities for small scale producers of poultry products to establish in Delta, by obtaining various permissions to grow products for sale.

Egg Producers

- Unregistered producers of eggs, including certified organic, from flocks under 99 hens are exempt from BC Egg Marketing Board (BCEMB) levy if marketing directly to consumers
- Egg producers with 100 to 399 laying hens are required to have a small lot permit under the Small Lot Authorization Program, and are exempt from BCEMB registration and licensing if marketing directly to consumers. Specialty producers, including certified organic, are required to be registered under the Specialty Layer Quota system of the BC Egg Marketing Board. A total of 10,000 layers are allowed in BC's small lot program
- All registered producers with flocks of 400 layers or more are required to be licensed to have quota for their production and their eggs must be graded at a federally licensed and provincially licensed grading station.
- The BCEMB has a New Producer Program Lottery to allot New Entrant Specialty Layer Quota in units of 3,000 hens to 4 new producers in 2010.

Chicken Growers

- Unregistered chicken growers may grow up to 200 chickens for personal consumption, i.e., not for sale
- Growers raising more than 200 chickens, including specialty chicken, can sell up to 3,000 kgs of chicken live weight per year by obtaining an annually renewable permits from the BC Chicken Marketing Board (licensing fee = \$20). Permit holders are exempt from BC Chicken Marketing Board levy

¹⁵⁵ See The Poultry Site. Cocci Forum. <http://www.thepoultrysite.com/cocciforum/issue5/59/cover-story-natural-tendencies>

¹⁵⁶ The greenhouse gases of concern in poultry operations are N₂O, CO₂ and methane (CH₃).

¹⁵⁷ Verge, XPC, JA Dyer, RL Desjardins and D Worth. 2009. Long-term trends in greenhouse gas emissions from the Canadian poultry industry. The Journal of Applied Poultry Research. 18:210-222. <http://japr.fass.org/cgi/content/abstract/18/2/210>

- All registered growers with more than 3,000 kgs chicken live weight per year must possess non-interchangeable Mainstream Quota or Specialty Quota.
- The BCCMB has a new entrant program to accept applications from the 3 areas of the province to produce specialty or mainstream chicken, with the maximum number of new quotas, not exceeding 7,716 kg per 8 week cycle, issued per year to be determined by formula and lottery draw.

Turkey Growers

- No one may market directly to consumers unless licensed by the BC Turkey Marketing Board
- Farmers are allowed to grow up to 50 organic turkeys per year before they are required to be licensed
- Producers with a direct vendor (small lot) permit may place up to 300 poults per year, but shall only market direct to end consumer and not market any regulated product to any wholesaler, broker, processor, turkey broker, retail grocery chain or commercial foodservice chain
- Producers of more than 300 turkeys per year are required to hold quota.

6.3.2 Dairy Sector

The dairy sector is slowly leaving Delta, in response to various factors:

- relatively higher production costs
- cost of land to expand
- aging of operators in the sector
- displacement by transportation projects taking ALR land
- consolidation.

The current price of dairy quota calculates to about \$35,000 per dairy cow.

6.3.3 Meat Processing Sector

In the last five years, there have been efforts towards revitalizing the food processing industry in BC, launched with the formation of the BC Food Processors Association (BCFPA) in 2004.¹⁵⁸ The BCFPA is structured around the concept of representing all segments of the food, beverage and nutraceutical processing industry by providing resources and support to micro, small¹⁵⁹ and large processing companies. A goal of the industry is developing a fully traceable meat production and processing system.

The main challenges faced by the processing industry include:¹⁶⁰

- Food security
- Food safety
- Disposal of rendering products
- Disposal of Specified Risk Materials (SRM)
- Profitability in an environment of increasing food safety risk.

¹⁵⁸ See BC Food Processors Association. <http://www.bcfpa.ca/aboutus.html>

¹⁵⁹ BCFPA works in partnership with the Small Scale Food Processors Association, a BC organization focused on creating regional food sustainability and responsible for the BC Specialty Food Directory initiative. <http://www.ssfpa.net/>

¹⁶⁰ See Human, N. Food Crisis Preparedness. BC Food Processors Association. http://www.bcfpa.ca/documents/BCFPA_Reliance_breakfast.pdf

In the wake of the BSE and the avian flu crises, BC has made significant changes to its meat processing regulations, including requiring all abattoirs in the province to be either provincially or federally licensed, for the purpose of protecting public health and the integrity of BC's food supply. The Meat Inspection Regulation¹⁶¹ has had implications for local small scale meat processing, as raising the standards for waste management has made it infeasible for some local processing plants to comply, with the result that some areas of the province no longer have the capacity to slaughter.

The listeria contamination of a Maple Leaf Foods meat processing facility in Ontario, coupled with the resulting deaths, highlighted the need for processors to emphasize food safety and food crisis preparedness. For processors in BC, of which even the largest are small by North American standards, the financial risks from a food scare could be potentially fatal. In response to the need for financial risk management, the BCFPA has assisted in the development of FoodProtect™ for the industry.¹⁶² The program offers insurance to processors to protect their businesses from some of the adverse effects of a food safety event.

Nevertheless, there is no real advantage or economic rationale to developing animal processing capacity in Delta. Poultry meat processing already occurs much closer to centers of production in the Lower Mainland and quota production in Delta is sent there. If livestock herds were to establish in Delta, there could be opportunity for a mobile abattoir to operate in the area.

6.3.4 Berry Crops

As shown in Figure 6-32, the majority of berry crops in the Lower Mainland are sold into the North American processing market and the bulk of those are processed in the US.

Blueberries have been successfully marketed for their health and nutraceutical properties, resulting in strong global demand and explosive growth in Canada in the first half of the 2000's.¹⁶³ In the last 4 years of the 2000's, significant raspberry area has been converted to blueberry production in the Fraser Valley and acreage has more than tripled. However, in the last two years, supply has substantially outpaced demand with a significant drop in farm-gate prices. Blueberry production area is increasing in Delta.

Cranberry production is the other major berry crop grown in Delta. BC cranberry production is centered in the Fraser Valley. About 95% of cranberries grown in BC are marketed into the North American cranberry processing market which is centered in the US. BC production accounts for about 12% of the North American crop.¹⁶⁴ Most BC growers are grower members of Ocean Spray Cranberries. In BC, all, growers are required to be registered with the BC Cranberry Commission.

¹⁶¹ BC Food Processors Association. <http://www.bcfpa.ca/mies.html>

¹⁶² See Ball, C. Food Risk Trending and Risk Management. Reliance Insurance Agencies Ltd. <http://www.bcfpa.ca/documents/CB-FoodIllness.pdf>

¹⁶³ See Statistics Canada. Snapshot of Canadian Agriculture. <http://www.statcan.gc.ca/ca-ra2006/articles/snapshot-portrait-eng.htm>

¹⁶⁴ BC Cranberry Marketing Commission. <http://www.bccranberries.com/cransinbc.html>

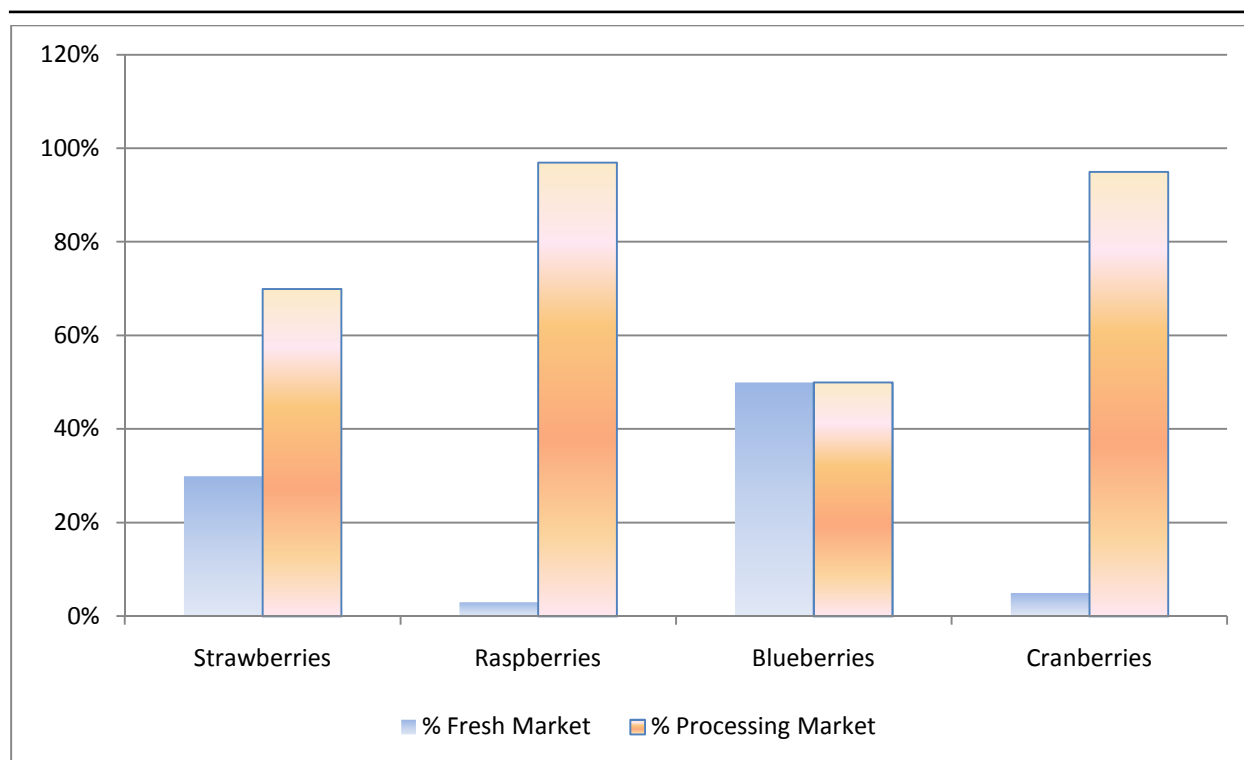


Figure 6-32: Proportions of Berries Sold into the Fresh and Processing Markets, BC Lower Mainland

Cranberry acres and yields have experienced sustained growth over the last 50 years, but with severe price adjustment when over supply has occurred. Cranberry prices have dropped and inventories have risen in the 2008-2009 economic downturn.¹⁶⁵

Berry production relies on pollination by bees to enable fruiting. The need for, and presence of, apiary activity in the Fraser Valley has increased significantly with the increase in berry area.

Strawberry production has been declining in the Fraser Valley. Processing strawberries are a regulated commodity in BC, with domestic prices and volumes negotiated at the beginning of the growing season. The fresh market is less than one month in duration and competes directly with imported strawberries grown year-round. Nevertheless, Delta is a good area for strawberry production.

Table 6-26 shows the market channels through which Lower Mainland berries were marketed in 2004. Fully 75% of all berries went into the processing market, representing 62% of the farm gate value generated by berries in the sector. Fresh to wholesale sales generated higher per unit value and accounted for about 22% of product sold.

¹⁶⁵ Cranberry Marketing Committee. 2009. Cranberry Industry Overview.
http://www.uscranberries.com/images/dynamic/news/attachment/cccgga_06_03_09.pdf

Table 6-26: Proportion of Locally Produced Berries Sold Through Various Market Channels, Lower Mainland, 2004

Market Channel	All vegetables			
	Quantity (000 lbs)	Percent	Value (\$000's)	Percent
Fresh to Wholesale	40,383	22.2%	45,012	33.5%
Farm & Roadside	3,872	2.1%	5,967	4.4%
Processed	137,488	75.6%	83,188	62.0%
Total	181,743	100.0%	134,167	100.0%

Source: BC Horticultural Statistics. 2004. <http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/345718/2004hortstats.pdf>

6.3.5 Field Vegetable Sector

The vegetable sector in the Lower Mainland has faced a variety of circumstances challenging continued viability since the early 1980's. The major factors include:

- Labour shortages
- Stiff competition from fresh market producers from the US, Mexico, China and South America
- Relatively higher production costs due to the high costs of inputs
- Access to irrigation water
- Relatively small farm size and limited economies of scale
- Loss of processors

Most recently, there has been an increase in vegetable growing activity in response to variety of consumer trends: demand for locally grown fresh produce, increased preference for organic products, carbon footprint and climate change concerns, support for local food security, and sustainability of the food system. This in turn has been reflected in an increased presence of farm direct sales and farmers' markets, and changes toward local purchasing decisions by major retailers and food service companies.

Production of several types of field vegetables is regulated by the BC Vegetable Marketing Commission (BCVMC) for the purposes of matching supply with anticipated demand and preventing predatory pricing and marketing practices. Producers enter into pre-priced supply contracts annually prior to seeding and in return know that their production will be received after harvest. The regulated field vegetables in the Lower Mainland include potatoes, cole crops, processing crops, carrots, green cabbage, beets, rutabagas, yellow onions, parsnips, red cabbage and white turnips.

The total farm gate value of regulated field vegetable production amounted to just over \$32 million in 2004.¹⁶⁶ Comparable figures for 2009 are not available as processor information is now confidential due to small numbers of processors. Nevertheless, in the 2004 to 2009 period, the value of potato, carrot, and beet production increased while value of production of cabbages, rutabagas, turnips, onions and parsnips dropped.

In 2004, potatoes represented about 50% of the value of regulated vegetable production, followed by processing crops (21%), and cole crops (11%). Delta has been an important producer of potatoes and processing vegetables, especially corn, peas, and beans (Table 6-27).

¹⁶⁶ Source: BC Vegetable Marketing Commission

Table 6-27: Regulated Vegetable Production, BC, 2004 and 2009

Field Vegetable	Value – 2004 \$000's	Value – 2009 \$000's	2009 vs 2004 Percent Change
Potatoes	16,177	18,911	17%
Cole crops	3,458	X	X
Processing crops	6794	X	X
Carrots	1508	2,990	98%
Green cabbage	1139	969	-15%
Beets	580	1,082	87%
Rutabagas	796	679	-15%
Onions - yellow	665	174	-74%
Parsnips	577	431	-25%
Red cabbage	280	335	20%
White turnips	216	163	-24%
Total vegetable sales	32,191		
Notes: X" indicates fewer than three reporting agencies.			
Source: BC Vegetable Marketing Commission			

After winning a continuation of a 2005 anti-dumping order for white and russet potatoes (in cartons under 50 lbs), BC potato growers faced another review in 2010. The initial ruling in 1984 was based on the unfair trading practice by the Washington State Potato Commission of dumping potatoes at prices below cost of production onto the BC market in the May 01 to July 31 period. In September, 2010, the Canadian International Trade Tribunal ruled to maintain anti-dumping duties against whole potatoes¹⁶⁷ originating in or exported from the United States of America into the regional market of British Columbia for a further 5 years.

6.3.6 Horticultural Processing Sector

A commercial processing market is critical in deriving value from second grade vegetable produce, which can represent up to 30% of total yield for some crops. The processing sector has been in steady decline for several decades and the remaining commercial horticultural processing capacity in the Lower Mainland is centered in Abbotsford.

The processing sector has undergone global consolidation in step with concentration in other components of the food system. Many local fruit and vegetable plants being taken over by international companies and were subsequently closed due to inefficiencies caused by small throughput and older facilities. In the early 1980's, there were 8 vegetable processing facilities in the Lower Mainland; today there is one. Any local processor would compete directly with cheaper imports from large international processors either located in, or obtaining product from, Mexico, South America, and China. In 2010, Snowcrest Packers ceased operations, threatening the market for processing vegetables, and leaving Canada Safeway (Lucerne Foods) and BC Frozen Foods Ltd. as the only remaining vegetable processors.

¹⁶⁷ See Trade Lawyers Blog. One Potato, Two Potato, Three Potato, Four – Five More Years of AD Duties. <http://www.tradelawyersblog.com/blog/article/one-potato-two-potato-three-potato-four-five-more-years-of-ad-duties/> The subject goods are ..."whole potatoes, excluding seed potatoes, excluding imports during the period from May 1 to July 31, inclusive, of each calendar year, and excluding red potatoes, yellow potatoes and the exotic potato varieties, regardless of packaging, and white and russet potatoes imported in 50-lb. cartons in the following count sizes: 40, 50, 60, 70 and 80, imported from the United States of America, for use or consumption in the province of British Columbia."

The advantages of processing products grown close to home have, until recently, been insufficient to offset the economic advantages related to the economies of scale achieved by large processors or the seasonality of BC production. This situation appears to be changing as customers increasingly demand fresh, local supply reaching the retail market with a smaller carbon footprint. However, the relatively small scale of production has created challenges in delivering consistent quality and supply of produce (due to weather events), making the transformation from a local supply chain to a local value chain more difficult for the medium-sized processing sector. Some of the remaining horticultural processors have developed market niches to process local crop when in season, but augmented by processing of imported fruits and vegetables. Production of a range and mix of frozen products has been a particularly effective strategy.

The proportion of vegetables sold through fresh wholesale, farm and roadside and processing channels in the Lower Mainland is presented in Table 6-28 for 2004. Fresh wholesale sales account for 64% of the volume of vegetable production in the Lower Mainland, followed by sales to processors (23.9%). In terms of value, fresh wholesale sales represent 56.2% while sales to processors represents about 15% of total value.

Table 6-28: Proportion of Locally Produced Vegetables Sold Through Various Market Channels, Lower Mainland, 2004

Market Channel	All vegetables			
	Quantity (000 lbs)	Percent	Value (\$000's)	Percent
Fresh to Wholesale	146,903	64.0%	36,1128	56.2%
Farm & Roadside	27,892	12.1%	18,342	28.5%
Processed	18,342	23.9%	54,855	15.2%
Total	229,650	100.0%	64,253	10.0%

Source: BC Horticultural Statistics. 2004. <http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/345718/2004hortstats.pdf>

6.3.7 Greenhouse Vegetable Sector

The greenhouse vegetable sector is regulated by the BCVMC. Quota must be obtained to build a greenhouse and crops grown are subject to annual analysis of North American markets. BC represents about 5% of North American supply.

Area by crop (2010)

In 2010, 144 ha of commercial greenhouse vegetables were grown in Delta by 11 greenhouse operations. Tomatoes – including beefsteak, tomatoes-on-the-vine and various specialty tomatoes such as heirloom and organic – were the main crops, representing 70% of Delta's total greenhouse vegetable production area. Peppers and cucumbers (long English and mini-cucumbers) were also grown comprising 20% and 10% of the production area respectively.

Greenhouse vegetables – including tomatoes, peppers and cucumbers – are regulated by the BC Vegetable Marketing Commission under the authority of the Natural Products Marketing (BC) Act to enable orderly marketing. An increase in production area occurs when quota is allocated for a new greenhouse or for the expansion of an existing greenhouse, or when an existing greenhouse resumes production after a period of not growing. Production area data in this document refer to "active" quota – i.e. quota which was planted and in production in the referenced year.

Area, Values, Employment

Over 90% of the commercial greenhouse vegetable production in the province is located in the Lower Mainland and Delta's greenhouse vegetable production area accounts for 52% of the 275 ha in production throughout the province.

BC represents about one third of the total Canadian production area and 6% of the North American greenhouse vegetable production area.¹⁶⁸ Greenhouses cover 1.4% of Delta's 10,180 ha of land within the Agricultural Land Reserve.

In 2009 the total BC greenhouse vegetable crop was valued at \$238.7 million (freight on board) and about 58% of this value was realized from Delta greenhouses.¹⁶⁹

Delta's vegetable greenhouses employ an estimated 1,800 people.¹⁷⁰ The workforce is comprised of year 'round or nearly year 'round crop workers and full-time technical employees.

Marketing

Marketing of greenhouse vegetables (tomatoes, peppers and cucumbers) is regulated by the BC Vegetable Marketing Commission. Five marketing agencies in the Lower Mainland are authorized to sell greenhouse vegetables: BC Hothouse Foods Inc., Country Fresh Produce Inc., Global Greenhouse Produce Inc., Greenhouse Grown Foods Inc. and Village Farms Operations Canada Inc. All Lower Mainland greenhouse operations – including all Delta operations -- market their crops through one of these agencies. There are a few small operations and organic operations outside of Delta, which market their product directly.

Greenhouse vegetable products are all sold fresh. Most products are graded and packaged on-farm using grading and packing lines in buildings adjacent to the greenhouse production area. Many greenhouses, especially those in Delta, have their own grading and packing lines. Greenhouse operations without packing lines transport their product to another greenhouse or to a central facility, for grading and packing prior to shipping.

About 70% of the greenhouse vegetable product is exported to the United States, especially along the U.S. Interstate-5 Corridor. The remaining product is sold primarily in BC with some (0-5%) shipped to other parts of Canada depending on local and US demand. A small portion – less than one percent -- of BC greenhouse vegetable production is exported to Asia (e.g. Japan and Taiwan).

Significance of Delta in the Greenhouse Vegetable Sector

Higher light levels in Delta compared with other locations in south-coastal B.C. make the municipality the favoured location in the region for greenhouse vegetable production, especially tomatoes. The correspondingly higher yield per area in Delta provides a competitive advantage in an increasingly competitive sector. In addition, the moderating effects of the ocean on summer and winter temperatures improve fruit quality and reduce heating costs, respectively.

Delta's advantageous climate is evidenced by the concentration of the greenhouse tomato production in the area. In 2010, 96% of the total B.C. greenhouse tomato production was located in Delta along with about one-third of the province's cucumber production area and one-quarter of the pepper production

¹⁶⁸ Based on Agriculture and Agriculture Canada estimates for 2009 tomato production area.

¹⁶⁹ BC Vegetable Marketing Commission

¹⁷⁰ Based on an average of 5 workers per acre.

area. In 2009, the value of Delta's greenhouse vegetable production was estimated at \$138.3 million (F.O.B.), 58% of the total B.C. value.¹⁷¹

Greenhouse Vegetable Sector Trends

Growth. The B.C. greenhouse vegetable sector experienced rapid growth throughout the 1990's and early 2000's as it emerged as a leading horticultural sector. Since the mid-2000's, growth has slowed as market demands have been met and profit margins declined. Figure 5-38 shows that Delta experienced little sector growth over the last decade (6%) while the total B.C. production area increased by 24%, most of that growth occurring between 2000 and 2005. Over the last five years, growth stabilized and the production area in both B.C. and in Delta has increased by 5%.

More recently, two of Delta's larger greenhouse operations expanded into the U.S., specifically California. California locations better enabled the greenhouse operations to meet the retail buyer demands for year 'round product supply. As well, technological advancements for energy production and water conservation, higher light levels and supportive government incentives are expected to reduce the overall cost of production in California compared with B.C.

Efforts to capture niche markets are ongoing and the variety of specialty greenhouse vegetables continues to increase.

Demographics. The number of greenhouse operations has declined throughout B.C. while the production area has slowly increased. Some of the older, less productive greenhouses have been removed or are being used to grow crops other than the regulated greenhouse vegetables, while other operations have consolidated to gain economies of scale. This trend is expected to continue.

Technology and Production. The BC greenhouse vegetable sector has a long history of adaptation and innovation in responding to production and marketing challenges. The technology shifts to conserve energy and reduce heating costs that were initiated in early 2000 continue. Nearly 60% of the acreage can now be heated with wood biomass and producers continue to monitor other "green" energy sources for possible implementation. One vegetable greenhouse complex has a co-generation facility utilizing methane gas from the City of Vancouver's landfill to generate electricity and heat.¹⁷²

Challenges

Global Competition. The greenhouse vegetable sector in Mexico has rapidly expanded and now poses a serious threat to the Canadian and U.S. greenhouse vegetable sectors by displacing market share. The quality of Mexican greenhouse vegetables as well as that of vegetables produced under shade cloth has steadily improved while the cost of production remains relatively low, enhancing Mexico's competitiveness.

Access to Labour. Greenhouse vegetable production is labour intensive necessitating access to reliable and good workers almost year 'round. Federal government foreign worker programs are critical to the sector as domestic labour remains scarce. The program requirements can be challenging for the sector given the year-round labour demand.

¹⁷¹ BC Vegetable Marketing Commission

¹⁷² See Maxim Power Corp. Announces Commencement of Operations at the Vancouver Landfill Project. 2003. <http://www.marketwire.com/press-release/Maxim-Corp-announces-Commencement-Operations-Vancouver-Landfill-Project-411692.htm>

Declining Profitability. The sector has experienced declining profitability as input costs continue to increase while farm gate value per unit area declines. Labour and energy are the greatest operational costs. While the cost of natural gas has declined in the last couple of years, the provincial Carbon Tax has mitigated these savings and affected the sector's competitiveness.

Issues and Concerns

Access to Affordable and Clean Water. Most greenhouses rely on municipal water although the demand is lessened by their re-circulating irrigation water and collecting rain water. Water charges vary between municipalities but Delta is reputed to have significantly higher delivery charges than other Lower Mainland municipalities.

Environmental and Social Impacts. The sector has adjusted farming practices in response to increasing concerns of environmental impacts in areas such as air quality, greenhouse gas emissions and wildlife habitat. The sector has also had to address the social impacts of farming practices such as artificial lighting, especially in areas adjacent to residential development.

Access to Capital and Land. Greenhouse operations have experienced increasing difficulty in accessing capital, constraining the purchase of new input requirements. The high land value in most Lower Mainland areas limits expansion opportunities.

Phytosanitary Impacts on Trade. The Canadian greenhouse vegetable sector is increasingly threatened by the potential introduction of new or regulated pests into the country, which could result in US border closures.

Public Opinion. As urbanization in greenhouse production areas increases, there is an increasing need to provide information to the public to support the "legitimacy" of greenhouse production on farmland. This is exacerbated with the promotion of "urban agriculture" models, as opposed to commercial farming, for community food security.

6.3.8 Ornamental Nursery Sector

The ornamental nursery and floriculture sectors, which have exhibited steady growth over the last decade, derive much of its demand for products from residential, institutional and commercial construction growth and the renewed interest of the consumer public in plants, gardening and landscaping. Nurseries commonly use a combination of field grown, container, and greenhouse growing and propagation production methods. The sector is subject to weather related losses from year to year, such as wet weather, unseasonable thaws, heavy snow events, and frost periods.

In the last decade, significant changes to management have been enforced in the nursery industry in response to pesticide use, alien species and disease outbreaks. In the aftermath of the 2003 detection of Sudden Oak Death (SOD) in BC and subsequent quarantines of nursery operations, the sector adopted mandatory regulatory controls to prevent the establishment of the disease, limit economic losses, retain US export markets, and protect native BC plants. The annual nursery sampling, testing, and audit procedures now in place have added costs to production while providing certification of disease status.

Issues the nursery sector faces into the future include:

- Continued access to water for irrigation
- Tightened US border inspections and procedures resulting in delays

- Presence and control of cross-over quarantine pests in other horticultural sectors (e.g., in the fruit sector) that can jeopardize nursery exports
- Intense competition in the continental floriculture market from Latin American countries
- Need to improve the current low efficiencies related to the processes associated with production in BC operations to improve competitiveness.

Nursery production is presently not a significant land use in Delta. In 2005, 15 Delta farms reported nursery products on 37 ha of land. A number of nurseries sell ornamental plants directly to the public.

6.3.9 Organic/Local Sector

About 90% of the organic products marketed in Canada are imported, from the US, Mexico, and China. The small scale of production of most organic farms makes them unsuitable to hold retail space in large retail outlets. Most local organic products are sold in farmers' markets, farm outlets, and specialty stores. Exceptions are the larger organic greenhouse and field crop operations.

Opportunities related to increasing population, tourist and recreational activities, and demand for local, natural and organic products are prompting more Delta farmers to produce products (e.g., vegetables, herbs, fruits and berries) for the local and regional fresh markets. Prices received at the farm gate and in Farmers' Markets are higher, although more effort and expense is required in marketing. In addition to organic certifications, retailers such as Thrifty's Foods are becoming more attuned to the "buy local" marketing advantages of BC produce.

Delta has the highest area of commercial organic production in the province and many of the larger organic producers in Delta market directly to regional wholesalers and retailers. Organic produce is also transported to Lucerne in Abbotsford for processing. Organic potatoes are an important crop in Delta.

The field set-aside program of the Delta Farmland and Wildlife Trust (see Section 7.3, below) has likely assisted some local farmers in converting to organic production.¹⁷³

6.3.10 Agro-Tourism Sector

Agro-tourism¹⁷⁴ is in its infancy in Delta. Currently 7 farming operations¹⁷⁵ attract the public to their farms, 4 of which are located on Westham Island. Interest in agro-tourism, including farm-direct marketing is increasing since attracting tourists to farm-related activities can provide additional economic benefits and well as diversify farm operations. Some local organic farmers participate in regional Farmers' Markets, including Ladner Village Market.

There are about 80 members in the Fraser Valley Farm Direct Marketing Association,¹⁷⁶ including 4 of those located in Delta. The Association produces a Farm Fresh Reference Guide that is distributed across the Lower Mainland. Other growers are considering joining in the near future.

¹⁷³ That is, a certified organic grower must establish that a qualifying field has not received chemical fertilizers or pesticides over a previous three year period. The set-aside program, which pays towards the building up of soil organic levels and improving soil structure, provides farmers who make the transition from conventional to organic production with a mechanism to derive revenue in the transition period.

¹⁷⁴ The term 'agro-tourism' is used here to emphasize the ALC's agricultural land use context of allowing agro-tourism on farms, as opposed to the technology or business context of agri-tourism.

¹⁷⁵ These are Westham Island Estate Winery, Emma Lea Farms Ltd., Westham Island Herb Farm, Little Island Farms & Westham Island Apiary, and Wellbrook Winery/Bremmer Foods, Vandula Farms, and the Earthwise Society.

¹⁷⁶ <http://www.bcfarmfresh.com/tobc.asp>

Nevertheless, with the scale of farming operations in Delta being large relative to farm size in the Lower Mainland overall, most effort has been focused on commercial ventures through bulk distribution channels.

6.4 Regional Significance of Delta Agriculture

It is useful to compare Delta agriculture to other jurisdictions to gauge its significance in the Metro Vancouver and the Lower Mainland. In 2005, Delta represented 6.9% of the Census farms in the Metro Vancouver Regional District, 18% of the farm area and 26% of the gross farm receipts (GFRs). At the Lower Mainland Level,¹⁷⁷ while Delta accounted for only 6.4% of the agricultural land base and 3.3% of the farmers, the municipality generated 11.5% of the GFRs.

The number of farms in Delta dropped about 4% between 1990 and 2005. In contrast, the number of farms in the Metro Vancouver declined 22% over the period and the Lower Mainland, as a whole, decreased 19%. As such, Delta's agricultural sector has shown remarkable stability over the last 20 years. Interestingly, the number of Census farms in BC has increased about 3% over the period.

Between 1990 and 2005, gross farm receipts in the Lower Mainland grew 124%, or about 5.5% per year over the period. This was slightly higher than provincial growth in agricultural GFRs, which doubled (i.e., at 4.75% per year). In comparison, GFRs in Delta increased 470% over the period (almost 11% per year, on average) and showed the most explosive growth in the province.

Figure 6-33 compares the significance of agricultural crops in Delta with the Lower Mainland and BC. Relative to the Lower Mainland, Delta is regionally and provincially significant in term of areas used to grow potatoes, greenhouse vegetables and field vegetables. At the provincial level, Delta represents almost 50% of the potato area, 50% of the greenhouse vegetable area and about 25% of the field vegetable acreage.

A measure of the productivity of Delta agriculture is provided by a comparison of the GFRs generated per ha of farm. In 2005, average GFRs in Delta, at \$25,000 per ha when greenhouse production is included, were the highest of any local jurisdiction in BC (see last column, Table 6-29).

The area of land held by Census farmers in Delta and BC has been relatively static since 1990. In contrast, the total farmed area of the Lower Mainland has increased 6%. Areas of land attached to farms in the lower Mainland and BC as a whole have increased 18.5%. Interestingly, total land in the ALR in the Fraser Valley and Metro Vancouver regional districts has decreased almost 8% since 1972.¹⁷⁸

Figure 6-34 compares changes in agricultural land use in Delta with the Lower Mainland and BC. While the total area of Census farms in Delta was static between 1995 and 2005, the farmed area of the Lower Mainland and BC increased. Delta experienced significant decreases in tame and natural pastures, while

¹⁷⁷ The Lower Mainland includes Metro Vancouver, FVRD, SLRD and the Sunshine Coast RD.

¹⁷⁸ Agricultural Land Commission statistics. http://www.alc.gov.bc.ca/alr/stats/Table2_incl-excl_RDallyears.pdf

Table 6-29: Number of Farms, Area and Gross Farm Receipts, Delta, Metro Vancouver, Fraser Valley Regional District, and Lower Mainland, 1990 to 2005

	1990	1995	2000	2005	1990-2005	2005 as %	2005 as % of Lower
	# farms	# farms	# farms	# farms	% change	of Metro Van	Mainland
Delta	188	186	196	180	-4.3%	6.9%	3.3%
Metro Vancouver RD	3,389	3,464	2,854	2,618	-22.8%	100.0%	48.4%
Fraser Valley RD	2,961	2,977	2,661	2,567	-13.3%		47.4%
Lower Mainland	6,657	6,671	5,733	5,410	-18.7%		100.0%
BC	19,225	21,835	20,290	19,844	3.2%		

	1990	1995	2000	2005	1990-2005	2005 as %	2005 as % of Lower
	GFRs	GFRs	GFRs	GFRs	% change	of Metro Van	Mainland
Delta	\$33,366,398	\$65,177,713	\$160,841,471	\$190,315,672	470.4%	26.1%	11.5%
Metro Vancouver RD	\$349,911,199	\$498,442,664	\$698,053,467	\$728,604,105	110.7%	100.0%	43.9%
Fraser Valley RD	\$384,132,357	\$535,152,835	\$735,859,984	\$921,425,274	164.8%		55.5%
Lower Mainland	\$741,417,579	1,044,151,246	1,441,145,402	1,660,504,505	124.0%		100.0%
BC	\$1,321,199,972	\$1,839,216,758	\$2,307,697,089	\$2,651,963,167	100.7%		

	1990	1995	2000	2005	1990-2005	2005 as %	2005 as % of Lower
	Ha	Ha	Ha	Ha	% change	of Metro Van	Mainland
Delta	7,527	7,544	7,840	7,520	-0.1%	18.3%	6.4%
Metro Vancouver RD	43,500	39,676	39,735	41,035	-5.7%	100.0%	34.7%
Fraser Valley RD	46,574	54,454	48,670	56,603	21.5%		47.9%
Lower Mainland	108,123	109,758	104,371	118,090	9.2%		100.0%
BC	2,392,341	2,529,060	2,587,118	2,835,458	18.5%		

Notes: "x" = not reported for confidentiality reasons.

Source: Statistics Canada. 1990, 1995, 2000, 2005. Agriculture Census.

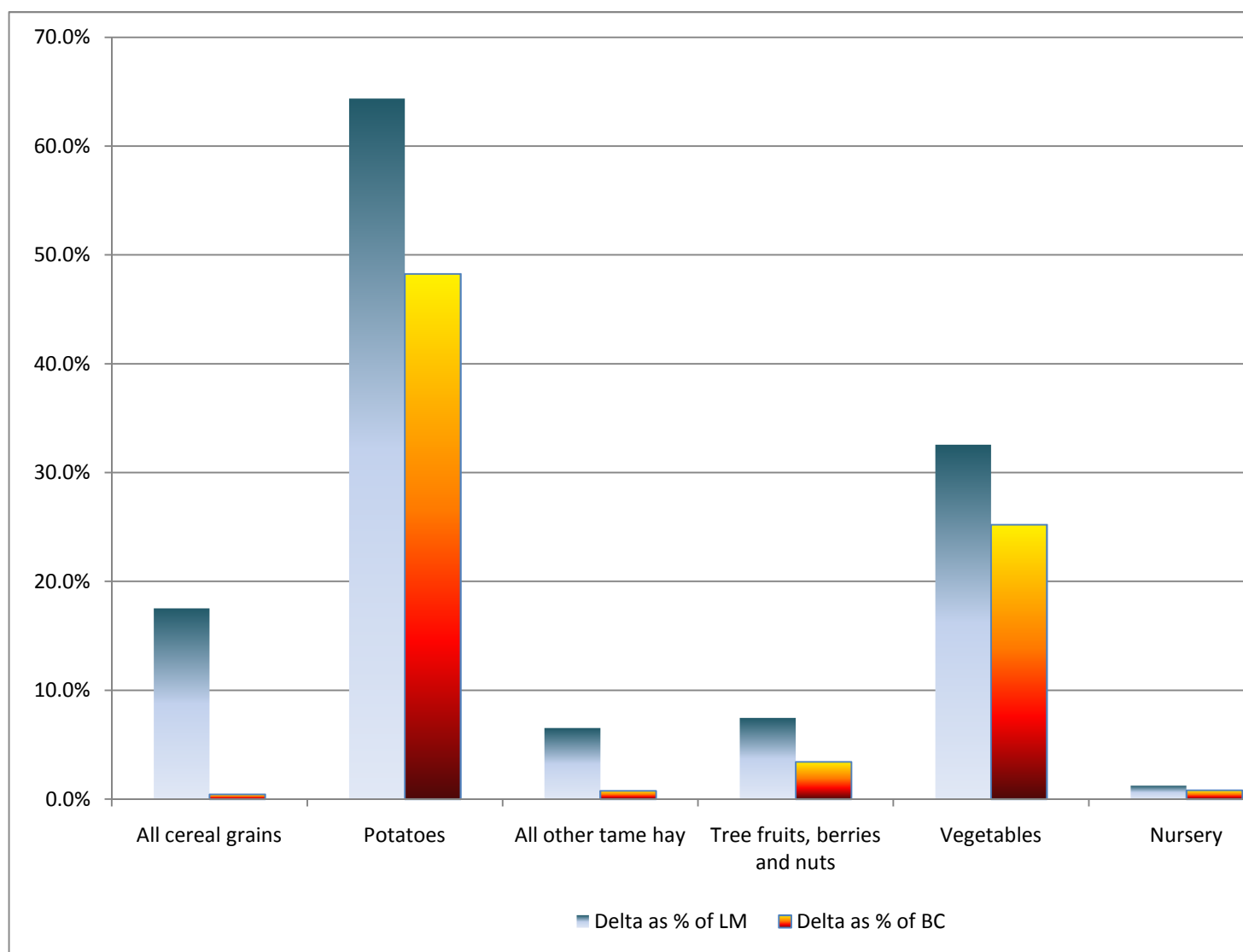


Figure 6-33: Delta Agriculture in Relation to the Lower Mainland and BC, 2005

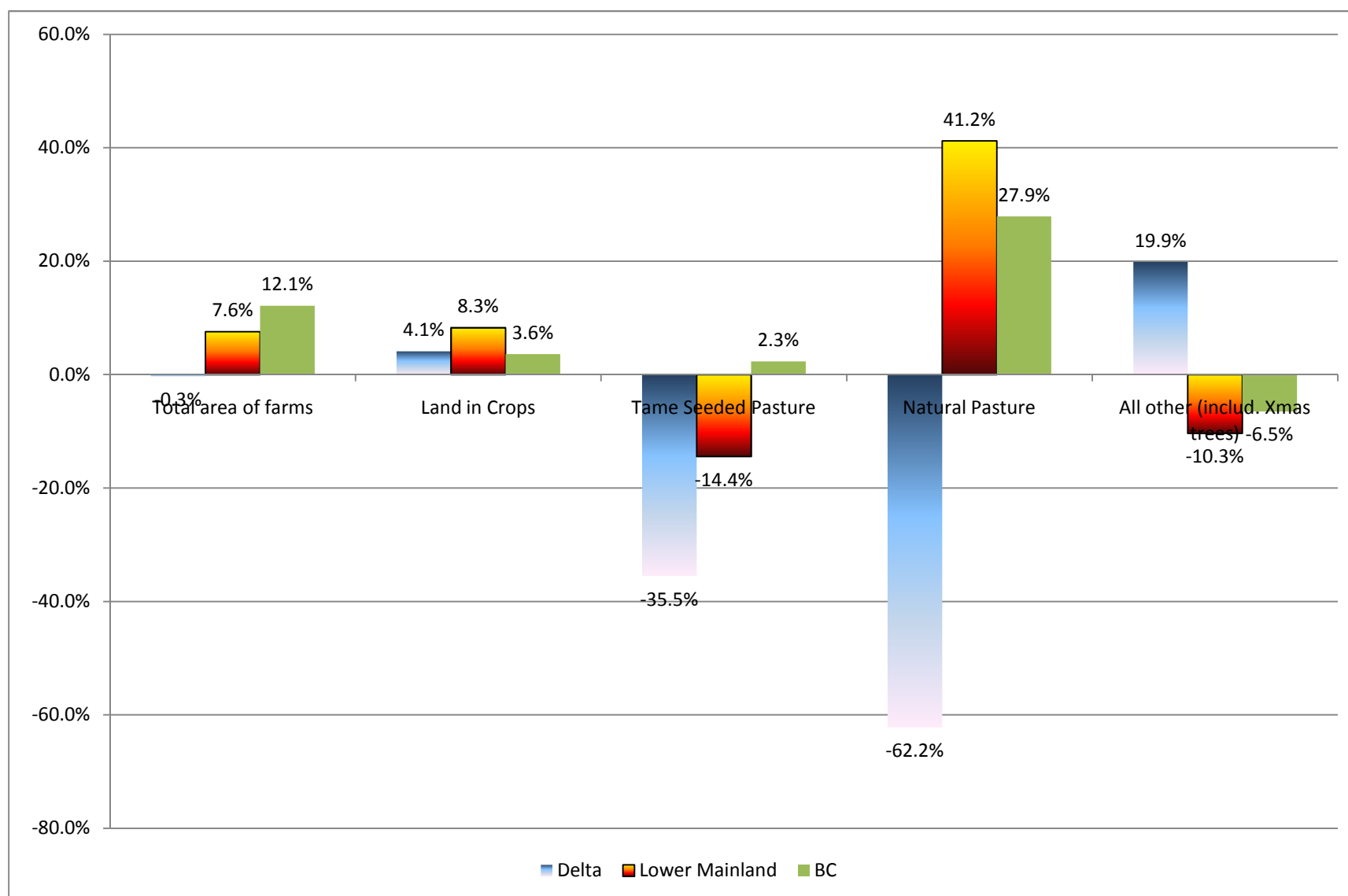


Figure 6-34: Comparison of Changes in Land Use - Delta, Lower Mainland, and BC, 1995 to 2005

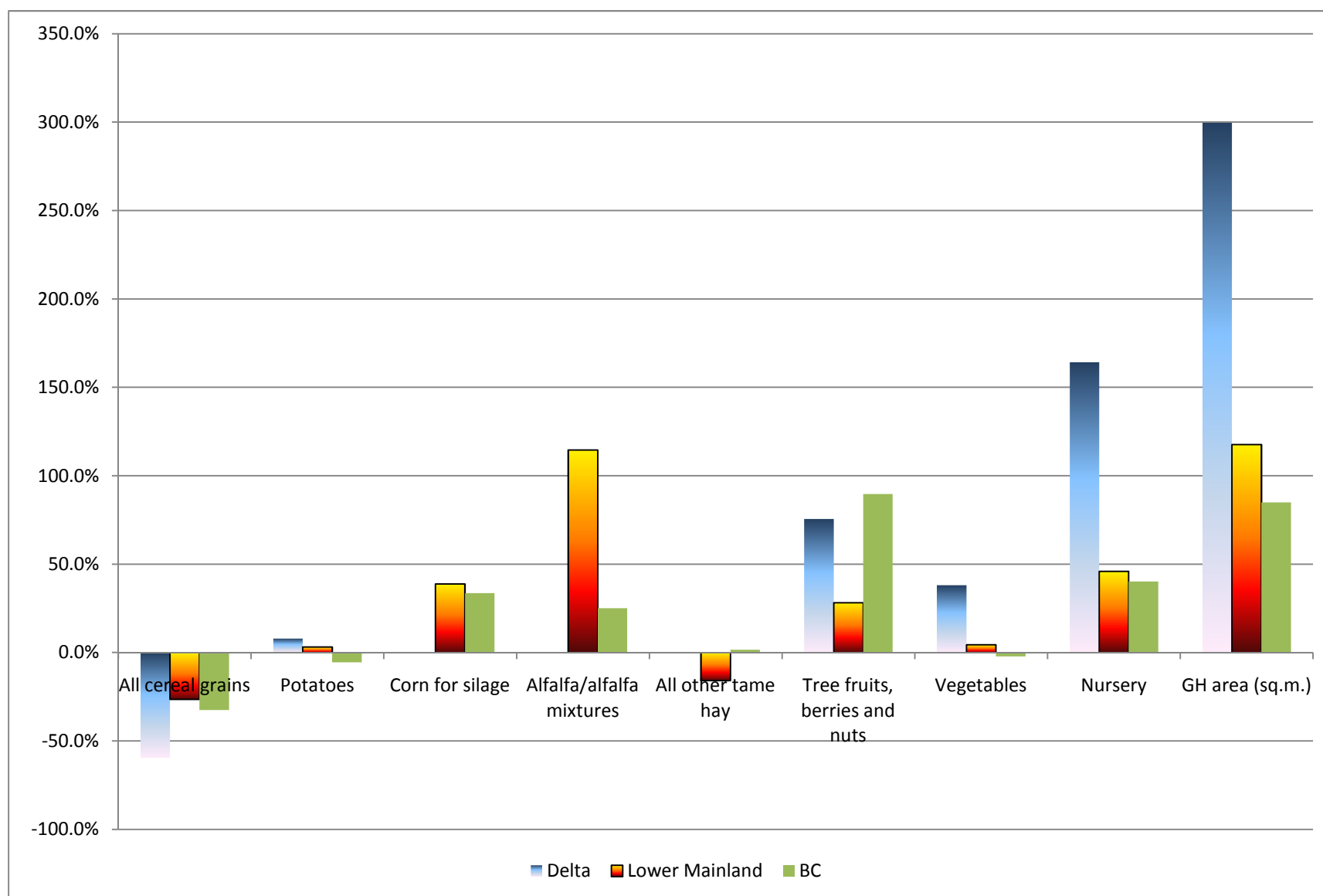


Figure 6-35: Comparison of Changes in Cropping, Delta, Lower Mainland and BC, 1995 to 2005

the Lower Mainland and BC experienced increases in these land uses. Delta also shows increased other land uses related to land on which farm buildings, barnyards, lanes, home gardens, and greenhouses are located.

Figure 6-35 compares changes in crop production in Delta with the Lower Mainland and BC. Delta's growth in, greenhouse, nursery cropping, vegetable and fruit & berry crops has been more rapid than the Lower Mainland. Alfalfa and corn for silage area has increased in the lower Mainland and BC, however, the data is not available for Delta. All areas show reduced cropping cereals.

Table 6-30 presents livestock inventory of Delta in comparison with the the Lower Mainland in 2005. Although poultry data is not available, the sector is small in Delta. Delta does not represent any significant proportion of the the livestock industry regionally.

Figure 6-36 shows changes in livestock inventory in the 1995 to 2005 period. All livestock types have been declining in number in Delta. Growth in goat numbers is insignificant.

Table 6-30: Comparison of Livestock Inventories, Delta and the Lower Mainland, 2005

	Delta	Lower Mainland	Delta as % of Lower Mainland
Total hens/chickens	x	15,476,410	
Turkeys	0	767,068	
Other poultry	x	504,176	
Total cattle & calves	3201	127,701	2.5%
Beef cows	274	9,783	2.8%
Dairy cows	1357	52,355	2.6%
Total pigs	x	100,476	
Total sheep & lambs	429	9,074	4.7%
Horses and ponies	599	9,331	6.4%
Goats	26	5,106	0.5%
Deer	0	261,948	
Llamas/alpacas	7	1,001	0.7%
Bees for honey (hives)	120	10,149	
Chicken meat production (kgs)	x	164,208,337	
Turkey production (kgs)	x	22,678,284	

Notes: "x" = not reported for confidentiality reasons.

Source: Statistics Canada. 2005. Agriculture Census

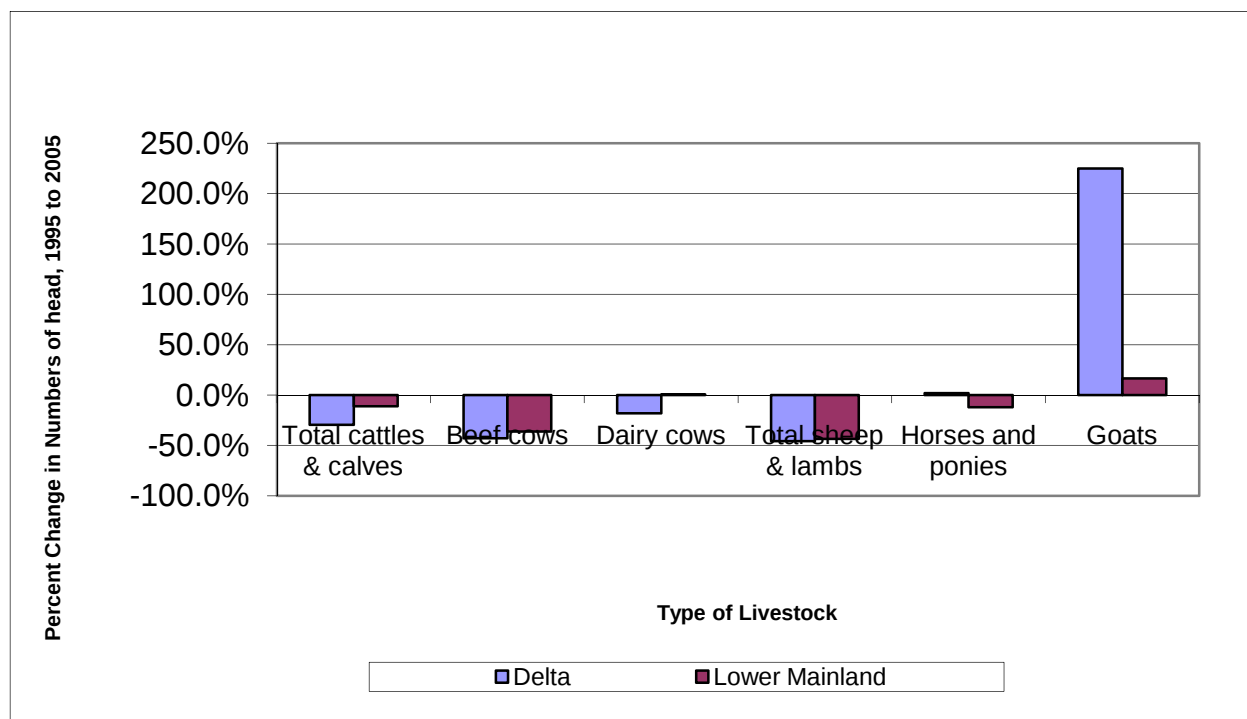


Figure 6-36: Comparison of Changes in Livestock Inventory, Delta and the Lower Mainland, 1995 to 2005

7.0 Other Contributions of Agriculture to the Community

In addition to the economic and employment benefits that agricultural enterprise provides, there are other benefits that reinforce agriculture's role as the best use of arable land. Protection and enhancement of farms makes sense for economic development and community infrastructure.

7.1 Fiscal Benefits of Agriculture on Local Tax Revenues

Over 80 "Cost of Community Services" studies in the US have compared municipal costs and revenues for different categories of land use. Privately owned farm, forest and ranch lands generate more in local revenues than they require in services.¹⁷⁹ These study results have been replicated in Canada.

For example, a 1999 Cost of Community Services Study indicated that farm, forest and open land had a positive fiscal impact on Skagit County, Washington¹⁸⁰. The study indicated that for every dollar paid in taxes by "open" lands, the properties needed 51 cents in community services because of reduced requirement for services. Residential development overall did not pay for itself, requiring \$1.25 in services for every dollar of revenue generated. Commercial and industrial developments pay more taxes than they receive in community services and along with farming, are economic generators in communities. However, commercial and industrial development is associated with population growth and has significant other implications in terms of demand for more services and infrastructure.

Farm lands in the US are also assessed at their current use and the findings support claims that agricultural holdings do not receive an unfair tax break. The message is not that agricultural land should not be developed, but that agriculture has a positive fiscal impact on the community and that the desirability of, and conditions for, conversion to other uses should consider fiscal implications.

A study of farmland classification in the Fraser Valley has similarly concluded that rural property taxes meet or exceed the services provided.¹⁸¹

7.2 Amenities Provided by Farmland

A recent BC "willingness-to-pay" study¹⁸² of the public benefits provided by the use of farmland concluded that agriculture provided public benefits of \$29,490 per acre in the Fraser Valley. In comparison, industrial land was estimated to provide \$14,000 per acre, while residential land use provided a deficit of -\$13,960 per acre.

The numerous amenities that farmland provides include both active and passive non-market benefits:

- Flood control and management
- Improved water quality
- Carbon sequestration
- Scenic views

¹⁷⁹ <http://www.farmland.org/services/fiscalplanning/default.asp>

¹⁸⁰ http://www.farmland.org/pnw/Skagit_County_COCS.pdf

¹⁸¹ BC Ministry of Agriculture and Lands. 2006. Direct financial contribution of farming to local governments in the Fraser Valley. Abbotsford.

¹⁸² See BC Ministry of Agriculture and Lands. 2007. Public amenity benefits and ecological services provided by farmland to local communities in the Fraser Valley. Strengthening Farming Report 800.100-1. http://www.smartgrowth.bc.ca/Portals/0/Downloads/Public_Amenity_Benefits_report.pdf

- Aesthetics of working farmland
- Farm-based recreation opportunities
- Provision of fresh locally grown food
- Assurance of a safe and reliable food supply.

Nonetheless, farmland is among the least expensive land for conversion to non-farming purposes. It can be appreciated that changes in these non-market benefits may be overlooked when land use is primarily driven by affordability determined by real estate market forces.

7.3 Ecological Services Provided by Agriculture

The ecological services contributed by Delta agriculture, in providing habitat for and feeding migratory waterfowl and other wildlife, are internationally recognized. The Delta Farm and Wildlife Trust (DFWT)¹⁸³ has been a successful collaboration among wildlife and farming interests since 1993 and has been touted as a model for similar programs in other areas. The programs the DFWT offers include:

- Grass Set-Aside - which shares the cost of managing grass fields with farmers to benefit terrestrial wildlife while assisting farmers interested in transitioning to organic production
- Winter Cover Crop – which shares the cost with farmers to provide forage for wintering waterfowl while benefiting farmers by reducing erosion and increasing soil organic matter
- Land Laser-Leveling – which shares in the cost of laser leveling fields with farmers and wildlife benefitting in the increased productivity derived from the improvement
- Field Liming - which shares in the cost of liming fields with farmers and wildlife benefitting in the increased productivity derived from the improvement
- Field Margin Stewardship Program – which assists in the cost of re-establishing or retaining hedgerows for the benefit of songbirds, waterfowl, beneficial insects and other species while farmers benefit from erosion prevention and reduced wind effects.

The DFWT has mobilized significant funding towards financing solutions to farmland and wildlife management issues and achieved substantial participation by Delta farmers. As Table 7-1 shows, the Program has spent an average of about \$330,000 per year since 1993/94, although amounts have dipped somewhat due to smaller return to the endowment during the recent economic downturn. The Grassland set-aside and land laser leveling programs have absorbed 42% and 37% of the budget, on average, respectively.

¹⁸³ The Delta Farm and Wildlife Trust is a non-profit organization supported by disbursements from the Vancouver Foundation (i.e., YVR Wildlife Stewardship Fund and the Boundary Shores Compensation Agreement Fund), contributions by the Delta Agricultural Society, Ducks Unlimited Canada, BC Waterfowl Society, Corporation of Delta, Delta Farmers Institute, and other donations. <http://www.deltafarmland.ca/dfwt.html>

Table 7-1: Program Expenditures of the DFWT, 2003/04 to 2009/10

Year	GLSA	Leveling	WCC	Liming	Total
03/04	\$160,725	\$137,790	\$45,550	\$30,000	\$374,064
04/05	\$171,750	\$99,855	\$48,571	\$48,339	\$368,515
05/06	\$153,950	\$111,128	\$47,243	\$49,884	\$362,205
06/07	\$126,063	\$129,173	\$36,435	\$43,049	\$334,719
07/08	\$123,725	\$96,422	\$12,852	\$25,434	\$258,433
08/09	\$131,925	\$147,040	\$14,958	\$26,302	\$320,225
09/10	\$109,603	\$150,680	\$25,629	\$24,728	\$310,639
Average/Year	\$139,677	\$124,584	\$33,034	\$35,391	\$332,686

Source: DFWT

Table 7-2 shows the approximate number of acres that have been involved in DFWT programs since its inception. On average, about 3,500 acres have been involved annually, although there has been some variation from year to year. The winter cover cropping program has been the core program throughout the period, averaging about 3,100 acres enrolled, annually, and representing about 90% of the farmland enrolled in any given year.

Table 7-2: Farmland Area Participating in DFWT Programs, 1993/94 to 2009/10

Year	GLSA	Leveling	WCC	Liming	Total
	Acres			Tonnes	
93/94	-	-	4,308	-	4,308
94/95	-	-	3,230	-	3,230
95/96	-	-	2,754	-	2,754
96/97	498	461	3,018	0	3,018
97/98	540	636	2,868	0	2,868
98/99	625	349	3,868	0	3,868
99/00	563	506	3,566	0	3,566
00/01	539	387	2,959	0	2,959
01/02	625	436	3,378	0	3,378
02/03	645	923	4,163	0	4,163
03/04	588	466	3,062	731	3,793
04/05	581	465	2,119	1054	3,173
05/06	571	375	2,470	1250	3,720
06/07	502.5	399	2,870.5	897	3,768
07/08	518.5	139	2,143	567	2,710
08/09	502.5	117.3	2,853.5	508.5	3,362
09/10	481	207.85	3,100	824	3,924
Averages	556	419	3,102	833	3,445

Source: DFWT

Table 7-3 indicates the number of farmers participating in DFWT programs annually in the 1993 to 2009 period. It may be noted that, although the number of farmers participating is declining to the present, the number of acres enrolled has not changed. This may indicate consolidation of farms and retiring farmers and/or that some farmers have taken advantage of programs, such as land laser leveling, and do not need to re-enroll.

Table 7-3: Number of Farmers Participating in DFWT Programs, 2003/04 to 2009/10

Year	Number of Farmers Participating	Acres Enrolled
03/04	64	3,793
04/05	56	3,173
05/06	50	3,720
06/07	46	3,768
07/08	41	2,710
08/09	39	3,362
09/10	40	3,924
Source: DFWT		

Despite the good efforts of the DFWT and its partners, farmers are still facing significant losses from wildlife, particularly waterfowl, they are unable to avoid or mitigate. Several attempts have been made to develop compensation programs that would correlate compensation with damages incurred. Examples, like the federal-provincial Waterfowl Damage Compensation Programs in the Prairie Provinces, would considerably alleviate the financial pressures caused by crop loss to predation. As well, the absence of support from the BC Ministry of Environment, despite their jurisdiction in the matter, is problematic.

It is to be expected that farmers will seek to further reduce crop loss risk due to waterfowl by switching to crops that are less susceptible to depredation. If conversions are forced due to economic impacts, there is the danger that suitable waterfowl habitat and foraging areas in Delta may decline. This would be anticipated to be an unfavourable outcome for wildlife interests.

7.4 Public Attitudes toward Agriculture

Overall, it has been indicated that a vast majority (95%) of Metro Vancouver residents feel that the presence of agriculture is a benefit to the community.¹⁸⁴ The identified benefits range from the provision of local food and produce to the presence of green space, nature and animals.

As such, there is substantial support for the protection and enhancement of agricultural functions for improvements to the quality of life contributed by agriculture. Some of these non-use values are existence values of agricultural assets that people feel are part of their natural capital¹⁸⁵ endowment and from which a range of benefits is derived knowing they continue to exist. The results of the estimate of the public amenity benefits of farmland in Metro Vancouver indicate a) public value of

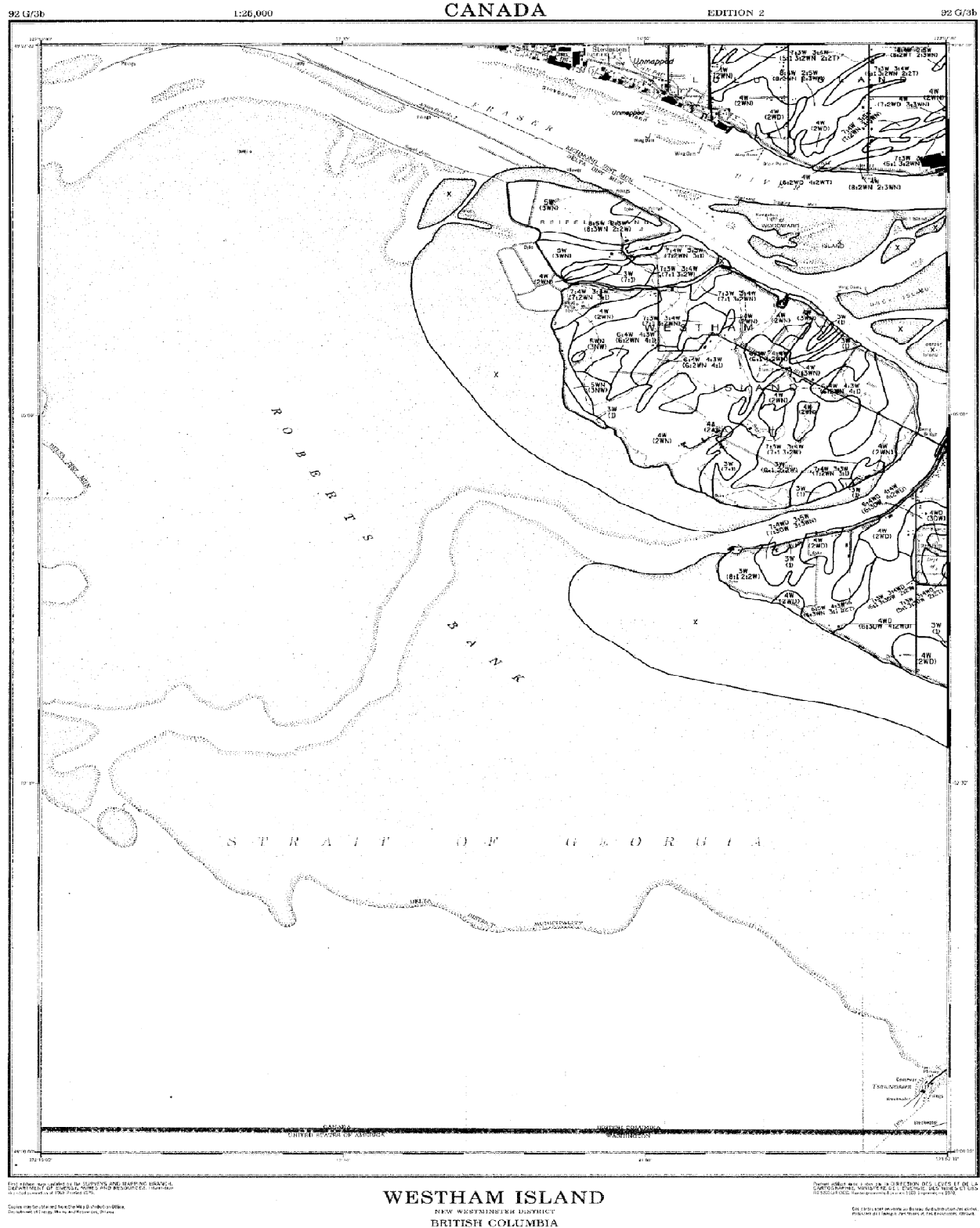
¹⁸⁴ Concerto Research. 2008. Agricultural attitudes study intercept study – Summary report. Prepared for the Ministry of Agriculture and the Fraser Basin Council.

¹⁸⁵ Natural capital may be defined as the natural resources, environmental and ecosystem resources and land, including farmland. Other existence values relevant to agriculture include cultural heritage and endowment values held in trust by society.

\$143,260 per hectare per year and b) public value in perpetuity (similar to market value) of \$2,865,200 per hectare per year.¹⁸⁶

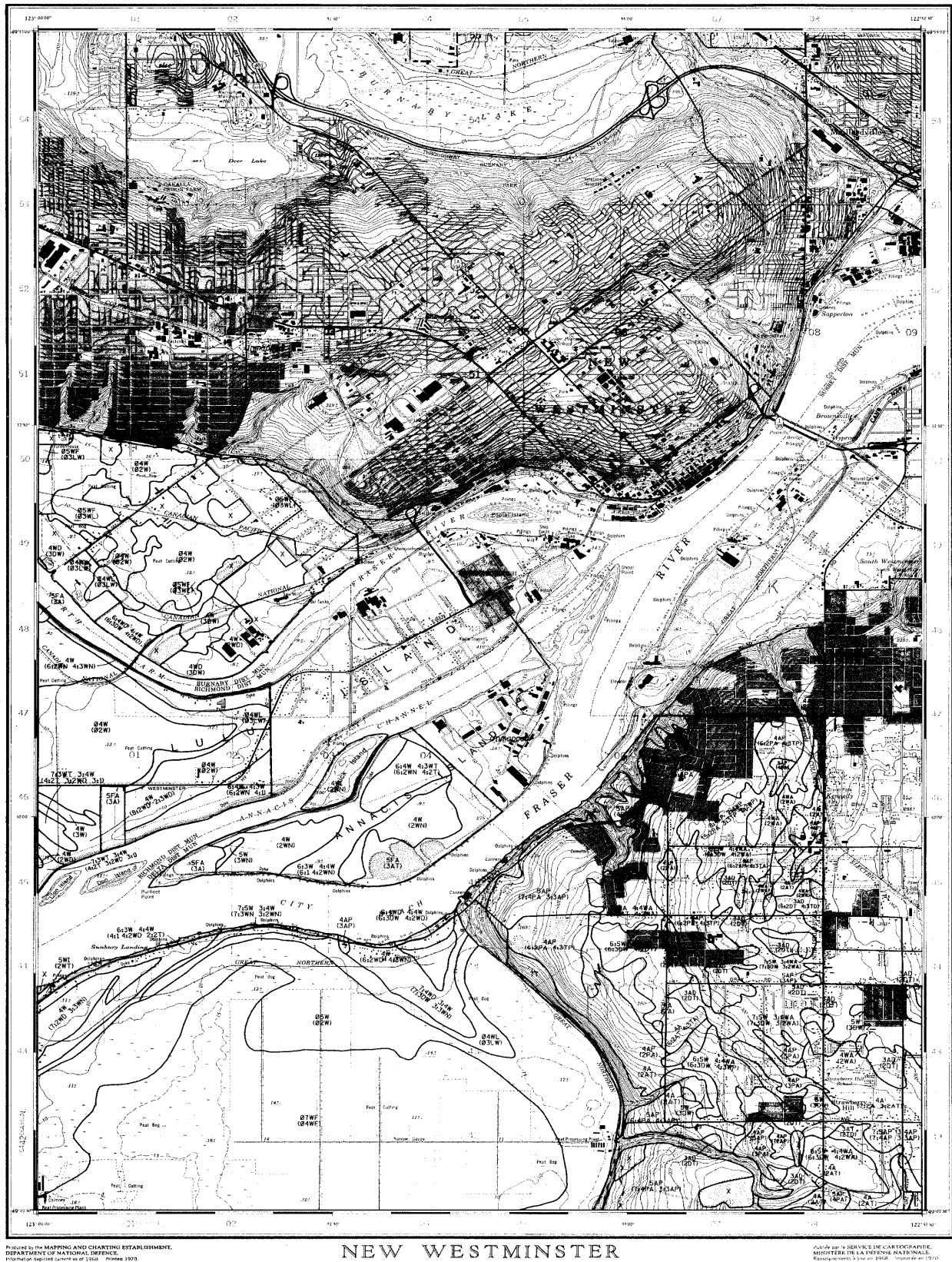
¹⁸⁶ See a study undertaken jointly by Ministry of Agriculture, Fraser Basin Council and Simon Fraser University personnel. 2009. An estimate of the public amenity benefits and ecological goods provided by farmland in Metro Vancouver. http://www.agf.gov.bc.ca/resmgmt/sf/publications/PublicAmenity_ExecSummary_MetroVanc.pdf

Appendix

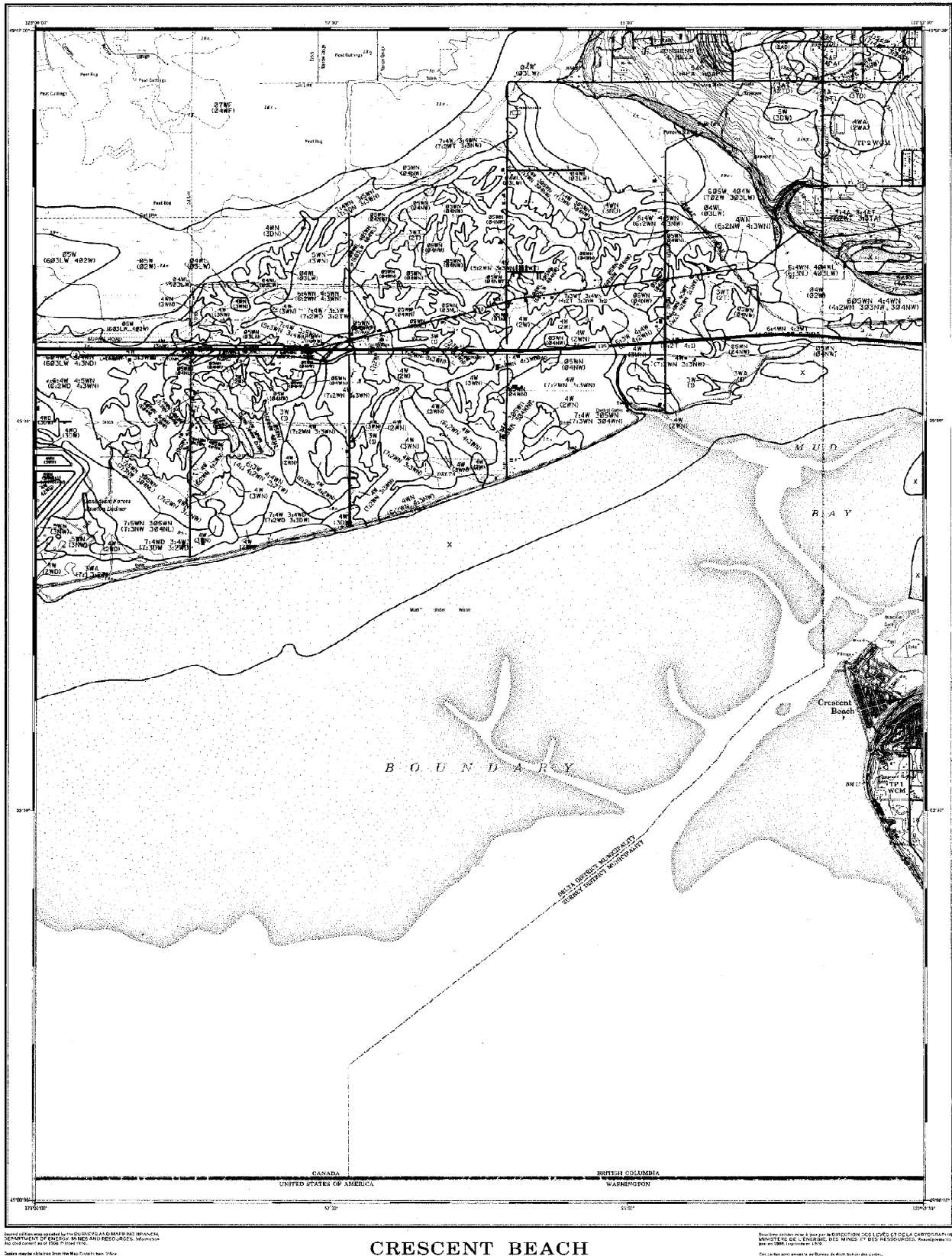


Appendix Figure 1: Agricultural Capability of West Delta

*Zbeetnoff Agro-Environmental
Quadra Planning*



Appendix Figure 3: Agricultural Capability of North Delta



Appendix Figure 4: Agricultural Capability of East Delta